THE

JOURNAL OF GAS LIGHTING.

PUBLISHED MONTHLY.

No. 34, Vol. II.] LONDON, NOVEMBER 10, 1851. [Price 1s., In America 35 Cents.

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ERRATUM.

At page 181, second column, for "Screwing the private consumers," *read* "Screwing the private consumer."

NOTICE TO AMERICAN READERS.

Complete series of the Journal may be had of Messrs. D. Appleton and Co., 200, Broadway, New York, to whom all subscriptions for the United States, after the 10th of January, 1851, must be paid.

NOTICES.

The subscription is 10s. per annum if paid in advance, or 12s. on credit, payable in two sums of 6s. each, due in June and December of each year. All subscriptions commence from the 10th of January.

All communications and orders for Advertisements to be addressed to the Editor, 32, Bucklersbury, London.

Back numbers exceeding three months' date will in future be charged double price, unless six or more consecutive numbers are taken at the same time. Nos. 6, 15, 18, and 23 are out of print.

The Editor will be particularly obliged by his friends forwarding to him Notices of all Meetings, Trials, or Appeals which it may be interesting to the Gas World to have reported.

Circular to Gas Companies.

The Editor may be consulted on all subjects connected with the supply and manufacture of gas, or the alteration and improvement of gas apparatus, and the construction of new works.

The awards, in connection with our branch of the industrial arts, made by the juries of the Great Exhibition of All Nations, will be found below, and generally confirm the opinions we expressed on the opening of this magnificent collection of the world's industry. There are, however, some omissions which we regret to see, more especially such as Messrs. Platow and Co.'s assortment of superior fittings, cooking stoves, and other apparatus for the domestic use of gas, and Messrs. West and Gregson's enamelled case gas meter. These oversights may, possibly, have been owing to the situations where the objects were exposed being out of the class to which they especially belonged; and we only render the parties an act of justice, in bearing our tribute to the excellence of the articles exhibited by them.

CLASS I.

MINERAL PRODUCTS.

No. in Catalogue.			
		Council Medal.	
51	Berard and Co.	44, Rue Blanche, Paris	Process for washing and purifying coals.

CLASS II.

CHEMICAL PRODUCTS.

		Prize Medals.	
7	Brown and Co.	Bow-common	Salts of ammonia.
109	De Cavaillon	Paris	Do. do.
23	Hills, F. C.	Deptford	Sal ammoniac.
		Honourable Mention.	
801	Collas, M. A. C.	Paris	Products from coal tar.
1180	Delignon, V.	Paris	Oil of schists.
8	Oehler, K.	Offenbach, n. Frankfort-on-Maine	Products from coal tar.

CLASS XXII.

HARDWARE.

		Council Medal.	
373	Winfield, R. W.	Birmingham	Brass foundry work, and metallic bedstead, with tape, rolled pillars, and chandeliers.
		Prize Medals.	
355	Chopin, Felix	St. Petersburgh	Bronze candelabrum.
446	Clarke & Restall	447, Strand, London	Lamps, gas burners, &c.
434	Cochrane, J.	Edinburgh	Gas meter.
46	Cornelius and Co.	Philadelphia	Chandeliers.
62	Cowley and James	Walsall	Steam tubes.
482	Defries, N.	Regent-street, London	Gas meter, bath heated by gas.
441	Edge, T.	Great Peter-street, Westminster	Gas meter.
444	Farraday & Sons	114, Wardour-street, London	Gas chandelier on Professor Farraday's principle.
230	Gandillot and Co. (Class I.)	Paris	Iron tubes.
438A	Glover, T. (Class I.)	Clerkenwell, London	Gas meter.
287	Krumbigel	Moscow	Gilt bronze candelabra
360A	Kenrick and Son	West Bromwich	Enamel ware.
1284	Lacarriere & Co.	9, Rue Ste. Elizabeth, Paris	Lustres, chandeliers, &c.
357	Lloyd, G. N.	Birmingham	Iron lap welded tubes for steam boilers.
340	Messenger & Son	Do.	Bronzed and lacquered lamps (and special approbation).
424	Paddon and Ford	Brownlow-mews, London	Gas meter.
323	Potts, W.	Birmingham	Bronzed and lacquered lamps (and special approbation).
433	Ricketts, C.	Agar-street, London	Gas stoves.
411	Selby and Johns (Class I.)	Birmingham	Iron tubes and enamelled iron.
443	Strode, W.	St. Martin's-le-grand, London	Gas stove.
667	Whitehouse & Co.	Wednesbury	Iron tubes and fittings
		Honourable Mention.	
438	Biddle, G. A.	Knightsbridge	Self-regulating gas burner.
426	Botten, C.	Clerkenwell, London	Protector gas meter.
445	Debaufer, H.	Creed-lane, London	Concentric gas lamp for the exterior illumination of shop windows.
241	Edwards, D. O.	5, Sydney-pl., Brompton	Atmopyre hoods and gas stove.
431	Grant, Donald	Greenwich	Gas stove.
432	Haldane and Rae	Edinburgh	Gasfittings, &c.
448	Holliday, R.	Holborn, London	Portable gas lamp.
436	Huxley & Heriot	Castle-street, Longacre, London	Gas stoves.
437	Roper, J.	Wigan	Transparent gas meter.
436	Ryan, J.	Dublin	Ditto ditto.
438	Shears & Son	Bankside, London.	Patent dry gas meter.
248	Warriner, G.	London	Gas cooking stove.
442	Young, W.	Queen-street, London	Vesta lamps.

CLASS XXVII.

MANUFACTURES IN MINERAL SUBSTANCES.

No. in Catalogue.			
	Prize Medals.		
399	Boucher, T. . .	Belgium	Gas retort.
112	Cowen, Jos. & Co.	Blaydon Burn, Newcastle-on-Tyne	Gas retorts and other objects in fire-clay.
	Honourable Mention.		
427	De Boissimon, C.	Langeais (Indre and Loire), France	Fire-bricks.
119	Harpers & Moore	Stourbridge	Do.
91	King and Co. (Class I.)	Stourbridge	Stourbridge clays.
396	Pastor, Bertrand, and Co. (Class I)	Belgium	Fire-clay and bricks.
122	Pease, J. (Class I.)	Darlington	Fire-clays.
110	Ramsay, G. H. .	Newcastle-on-Tyne .	Fire-bricks, gas retorts, and other works in fire-clay.
89	Rufford, F. T. .	Stourbridge	Fire-bricks, porcelain bath, &c.
394	Temsonnet, G., and Dartet	Belgium	Fire-clays.
398	Smal-Werpin, A. .	Belgium	Fire-bricks.

We are informed that an arrangement has been concluded, subject to the confirmation by Parliament, for the sale of the London works of the British Gas Company to the Commercial Gas Company. The former company has been in existence nearly 30 years, and has lighted the greater part of the eastern portion of the metropolis. It has a paid-up capital of £90,000 (in 5000 shares, upon which £18 has been called), and a debenture debt, stated at £46,300 in the last Parliamentary return. The Commercial has been for some years a competing company, and will for the future be the sole occupant of an extensive district. We understand the terms of sale are such as will allow about £70,000 to be divided amongst the shareholders of the British Company, the Commercial Company taking upon themselves the debenture debt. The British shares have long been at a considerable discount.

It was our unpleasant duty last month to be obliged to condemn in severe terms the conduct of one of the metropolitan gas companies, in reviving the ruinous system of buying its way into a district, by contracting for the supply of the public lights at an unremunerating price. Our report of the late proceedings of the Marylebone vestry confirms our view of the impolicy of such demonstrations. It is well known that we are no advocates of indiscriminate competition in the supply of gas, and that we cannot contemplate with any satisfaction the possibility of three series of pipes and three capitals being buried in the public streets; and yet the admission of the Western Gas Company into the districts to which the Equitable have just been admitted is a necessary and inevitable consequence of the principles promulgated by the emissaries of the Equitable Gas Company, and adopted by the vestry. It is a farce to talk of any *bonâ fide* competition being possible between two such companies as the Chartered and the Equitable, having the same community of interest, trading in the same article, and unable to offer any inducement for dealing with the one in preference to the other. The only practical effects of such a situation are to open a door for the introduction of treachery, intrigue, and bad faith, in their relations with each other, and to squander the funds, which unfortunate shareholders have a right to look to as being held in trust exclusively for their advantage.

The reply of the Imperial Gas Company to a communication of the vestry, inviting a reduction in the present price of the public lights, is a manly, logical, and unequivocating document. It is a frank and explicit declaration of the principles which guide this important company in all its decisions, and is in complete accord with those we have ever maintained in our columns, and such as the public will ultimately derive the largest measure of advantage from.

Communicated Articles.

THE CHEMISTRY OF GAS LIGHTING.

(*Continued from page* 183.)

It has been previously stated that the main object of our present undertaking is no less to stimulate practical inquiry, than lay down some definite information concerning coal and its gaseous products. Hence, although, in the analyses about to be detailed, all requisite precautions were taken to ensure accuracy, and some considerable trouble employed in procuring what may be termed fair commercial samples of the coals in question, yet it will give us much greater satisfaction to learn that those interested in such matters have been led by our efforts to analyse and examine for themselves, than that they continue to rest supinely contented with the "*ipse dixit*" of our experimental investigations. To afford every facility for the propagation of this description of knowledge, we not only publish "*in extenso*" the most minute and seemingly trivial circumstances connected with analysis, but have also, as will be seen, purposely simplified the processes, to an extent which will, we hope, bring them within the grasp of the great bulk of our readers. To some these details may at times appear almost childishly prolix and superfluous; as, however, we seek not to instruct the learned, but merely to inform the chief body of the people, this (if an error at all) is an error on the right side. First, then, as to the general character of a coal: these relate to its colour; its structure, whether massive or in plates, or concretions of any determined form; its lustre, whether shining or dull; its fracture, of which there are sometimes two, as in many cannel coals, one slaty, in layers nearly or quite parallel, the other a cross fracture, more or less at right angles with the above. The colour of the coal, where scratched by a penknife, and the mode in which it comports itself when thrown into the fire, together with the colour of the residuary ash, and the specific gravity of the coal, are all included under the general character of a coal. To determine the specific gravity of any particular sample it is convenient to employ a piece of coal weighing about 500 grs.; this is attached by a hair or slender thread to one pan of a balance, the other containing the weight requisite to counterpoise it; if we now permit the suspended piece of coal to dip into a vessel of water placed beneath, it will float on the surface of the water until sufficient weights are added to the pan from which it hangs to enable it to sink slowly through the fluid. If, upon removing the smallest of these weights, the coal again rises to the surface, we know that the proper weight lies between the two thus found. Suppose, for example, that the coal weighed at first 540 grs., but has required 433 to sink it, whilst with 432 it swims, then the true weight may be taken at 432½ grs., and the original weight, divided by this weight, gives the specific gravity of the coal, which, in the instance chosen, would be 1·2485, assuming water at unity, a number more convenient than any other, though 1000 is taken by some chemists. The next step is to determine the amount of volatile matter and coke which the coal contains. For this purpose a small iron crucible, provided with a cover perforated by a hole, may be employed. Having carefully weighed out 100 grs. of the coal, it must be introduced into this crucible, and, the cover being applied, the whole is subjectected to a red heat, until all evolution of inflammable gas has ceased to issue through the aperture in the cover; when this is seen to be the case, the crucible must be removed from the fire and suffered to cool, after which the coke may be taken out and weighed. The loss or difference in weight is the quantity of volatile ingredients in the coal. It is better to make three successive experiments on each coal, and take the average, than rely upon one single trial, and these experiments ought to furnish results which do not differ more than one grain from each other. Having thus ascertained the proportion of coke and volatile matters, the coke is to be placed in a muffle, heated red hot, and through which a current of air passes slowly; here the carbon is consumed and carried away, leaving the incombustible residue or ash behind, which must then be weighed with care. If a small shallow vessel, made by turning up the sides of a piece of platinum foil, has been used to contain the coke, this is easily withdrawn at the end of the operation, and, being transferred to the balance, we are enabled to weigh the whole without the risk of loss. The nature of this ash is of some consequence towards elucidating the history of the coal, and therefore its colour must be noted, and a few simple tests applied to determine its chemical composition. If it is white, a portion may be treated at the blowpipe with a weak solution of nitrate of cobalt, the ash being retained for a few seconds in the exterior or oxidising flame. The presence of alumina renders the sample blue, magnesia gives a pale flesh tint, lime a greyish black, and oxide of iron and alumina combined a dirty green. Where much alumina is supposed to exist, it becomes occasionally an interesting question to ascertain in a rough way its amount. This is easily done by fusing a given weight of the ash with twice its quantity of the bisulphate of potash, the heat being carried almost to redness, after which the whole is allowed to cool, and must then be boiled in water for a few minutes, and the solution filtered. This solution, on being evaporated and set aside to cool, will furnish crystals of alum, containing about 10 per cent. of alumina. The operation may be conducted in a small Berlin ware evaporating dish, and, if 100 grs. of ash and 200 of the bisulphate of potash have been used, the boiling water employed to dissolve the residue should not be less than four ounces, and this, after filtration, may be evaporated down to one ounce ere it is put aside to crystallise. There is no danger of confounding together the alum and bisulphate of potash, for this latter is an extremely soluble salt. All the ashes which contain silicate of alumina will thus furnish alum. It now only remains to describe the means to be employed for ascertaining the quantity of sulphur existing in the coal, and the quantity which passes off in the volatile products. Having reduced 100 grs. of the coal to a fine powder, this must be mixed with about 30 grs. of pure carbonate of soda, also in fine powder. The mixture being now placed in a small iron ladle, similar to those used in melting lead; this is next placed over a clear fire so as to admit of the free ingress of air, by which the bituminous and carbonaceous ingredients of the coal are gradually burnt off, whilst

the sulphur combines with the metallic portion of the soda to form sulphuret of sodium. By retaining this latter a sufficient time over the fire, it would ultimately be converted into sulphate of soda; but it is better to expedite this process, and this is easily effected by sprinkling the mass whilst red hot with powdered nitrate of potash, so long as any deflagration occurs. When this ceases altogether, the heat should be raised for a few minutes, after which the ladle may be removed from the fire and suffered to cool. The soluble contents of the ladle are now to be extracted by boiling water, and the solution filtered. The filtered liquid, being then supersaturated with pure nitric acid, is next treated with an excess of a solution of nitrate of baryta, by which a precipitate is formed, and this precipitate, carefully collected on a counterpoised filter, and well washed with boiling distilled water, may now be dried and weighed in the usual manner. Every 117 grains indicate 16 grs. of sulphur, consequently we thus determine the amount existing in 100 grs. of the coal. To find the quantity which passes off with the volatile matters, nothing more is necessary than to heat 100 grs. of the coal in an iron crucible, as recommended for the determination of the volatile ingredients. The coke left after this process is then to be powdered, mixed with carbonate of soda, and treated exactly as indicated above with respect to the coal itself, by which its content of sulphur will also be determined, when it is needless to say that the difference represents the amount carried off in a volatile state, as nearly as chemical analysis can approach perfection. To the gas manufacturer this is a question of great importance, for, although it frequently happens that the sulphur exists in coal as bisulphuret of iron, in which case it is equally divided between the fixed and volatile matters, yet there are some coals, the Boghead and Capeldrac for example, in which nearly the whole of the sulphur is expelled, and goes away with the gaseous products. This is precisely one of the questions which practical men should therefore invariably determine for themselves, as it will not unfrequently enable them to account for much seeming mystery and inequality of action in the purifiers. We now proceed to give a tabular view of the composition of the following ten specimens of cannel coal: —

Name of Coal.	General Character.	Volatile Matters.	Coke.	Ash.	Nature of Ash.	Sulphur.		
						In Coal.	In Coke.	In Volatile Matters.
Boghead	Brown, compact and massive, containing a few impressions of sigillaria. Principal fracture, slaty, conchoidal; cross fracture, irregular. Streak, yellow. Thrown on the fire, decrepitates slightly, does not fuse, but splits. Colour of ash, white; with nitrate of cobalt, blue. Specific gravity, 1·221.	68·4	31·6	22·8	Silicate of alumina.	·53	·08	·45
Kirkness	Massive and foliated, free from foreign matters. Dull brown. Principal fracture, slaty; cross fracture, conchoidal. Streak, brown. Scarcely decrepitates on the fire. Colour of ash, whitish grey; with nitrate of cobalt, dull dark blue. Specific gravity, 1·2080.	60·	40·	13·5	Silicate of alumina, lime, and oxide of iron.	1·4	·58	·82
Capeldrae.....	Massive, dull black, impressions of sigillaria, with deposits of carbonate of lime and pyrites. Principal fracture, conchoidal and slaty; cross fracture, distinctly conchoidal. Streak, yellowish brown. Thrown on the fire, decrepitates, splits, and flies, but does not fuse. Ash, white; with nitrate of cobalt, blue. Specific gravity, 1·2275.	54·5	45·5	10·5	Silicate of alumina.	·65	·20	·45
Old Wemyss	Compact; dull brownish black; free from foreign matters. Principal fracture, slaty; cross fracture, angular, inclining to conchoidal; streak, dull brownish black. Thrown on the fire, decrepitates and splits, but does not fly. Colour of ash, dull white; with nitrate of cobalt, olive green. Specific gravity, 1·3256.	52·5	47·5	15·1	Oxide of iron and silicate of alumina.	1·30	·60	·70
Lesmahago	Massive, dull black. Principal fracture, slaty, conchoidal; cross fracture, conchoidal and angular. Streak, black and somewhat shining. Thrown on the fire, decrepitates slightly, does not split or fuse. Colour of ash, white; with nitrate of cobalt, dirty blue. Specific gravity, 1·2220.	49·6	50·4	9·1	Silicate of alumina and oxide of iron.	2·25	1·14	1·09
Knightswood.....	Compact, dull black, massive, with deposits of carbonate of lime and iron pyrites. Principal fracture, slaty, conchoidal; cross fracture, conchoidal. Streak, shining black. Thrown on the fire, decrepitates and flies, but does not fuse. Colour of ash, pale umber; with nitrate of cobalt, dull black.	48·5	51·5	2·4	Oxide of iron and silicate of lime, with alumina.	1·1	·61	·49
Arniston	Resembling lignite, and containing crystals of carbonate of lime, with impressions of leaves and deposits of iron pyrites. Compact. Principal fracture, slaty; cross fracture, irregular; streak, dull brownish black. Thrown on the fire, it decrepitates, but does not fly. Colour of ash, a dirty grey; with nitrate of cobalt, greenish black. Specific gravity of coal, 1·1967.	45·5	54·5	4·18	Silicate of lime, alumina, and oxide of iron.	1·70	·95	·75
Lochgelly	Massive, uniform, and free from foreign matters. Dull slate black. Principal fracture, conchoidal; cross fracture, angular and conchoidal; streak, shining black and waxy. Thrown on the fire, decrepitates strongly, flies in pieces, but does not fuse. Colour of ash, white; with nitrate of cobalt, green. Specific gravity, 1·2703.	39·5	60·5	8·1	Silicate of alumina and lime.	·25	a trace	·25
Wigan	Compact, black, and shining. Principal fracture, conchoidal; cross fracture, conchoidal and cubical. Streak, shining black and waxy. Thrown on the fire, decrepitates, flies, and slightly fuses. Colour of ash, yellowish brown, inclining to red; with nitrate of cobalt, olive black. Specific gravity, 1·271.	37·	63·	3·	Oxide of iron and silicate of alumina.	1·25	·60	·65
Ramsay's Newcastle	Compact and massive, slightly tinged with oxide of iron. Black and shining. Principal fracture, highly conchoidal and resinoid; cross fracture, conchoidal and cubical. Thrown on the fire, decrepitates and flies to pieces, inclined to fuse. Colour of ash, reddish brown; with nitrate of cobalt, dull black. Specific gravity, 1·290.	36·8	63·2	6·6	Oxide of iron and silicate of lime, with alumina.	1.75	·94	·81

(*To be continued.*)

THE GREAT CENTRAL GAS CONSUMERS' COMPANY.

The shareholders in this company had a grand field-day on the 28th ult., at the City of London Tavern; their first half-yearly general meeting under their act of incorporation having been held on that day. The ground appears to have been very strictly kept, and precautions, unusual on such occasions, taken to exclude any refractory members. The blunt Mr. Pearse had to take his station outside the door, while the bland Mr. Dakin was administering his gilded pills to a well-drilled regiment of patients within, whose open mouths and capacious throats were eager to bolt any amount of rigmarole prepared by his experienced hands. Simple Mr. Pearse thinks that, because he has parted with his money, and, so long ago as the 24th of April last, lodged with the company a transfer in his favour, prepared and witnessed by their own officers, and accompanied by a declaration of the seller, stating that the share had been lost, sworn to before their own solicitor, an alderman of the City of London, and, further, having paid the registration fee demanded, that he ought to find his name on the register of shareholders six months afterwards; and so think we. Mr. Dakin, however, thinks otherwise; and before the next general meeting some means will doubtless be devised of solving the question at issue.

Mr. Pearse's publicly expressed opinion, that the scheme was "founded by deception, and maintained by deception and falsehood," was suggested as one reason for voting his exclusion. One would have thought that, under such a serious imputation, every facility would have been afforded for as publicly proving that his assertions were slanderous libels. The meeting declined the challenge, and we are left to draw our own conclusions from the refusal, aided by such facts as have been permitted to transpire. An obnoxious consumer, to whom a supply of their brilliant gas has been rejected, or a doubting shareholder, whose admission on to the register has been shuffled off for the space of six months, must have some suspicion that their custom or their presence might lead to inconvenient disclosures. It is, however, only a question of time, and sooner or later the truth must come out.

Let us then examine how the case now stands. On the 13th of May, 1850, we find Mr. Alexander Angus Croll, the founder and sole registered promoter of this company, pledging his reputation as an engineer to a committee of the House of Commons, that, with a capital of £136,033. 15s., expended in the construction of gas works on Bow-common, he could deliver for sale in the City of London 266,666,667 cubic feet of gas yearly, which, being sold at 4s. per 1000 feet, would yield a clear profit of £22,227. 10s. 4d. per annum, or upwards of 16¼ per cent. upon the capital to be raised.

We asserted at the time, that not only would this estimate of the outlay fall considerably short of what would be really expended upon the construction of works on the scale contemplated, but that their capacity for manufacturing and distributing gas was overrated, and the estimate of profits fallacious. Our predictions are in all respects verified.

Up to September 30, 1851, the shareholders are stated to have advanced £147,850. 2s., and £25,000 more had been raised on mortgage, making together £172,850. 2s., to be further increased to £200,806 by additional works now in progress. This is the state of the capital amount. The revenue account shows that from December 4, 1850, to September 30, 1851, 131,940,143 cubic feet of gas had been sold, producing a gross receipt of £26,388. 4s. 7d. Sixty-four days more would have completed the year: and, if we allow 38,000,000 feet for the probable consumption from October 1 to December 4, 1851 (which is an ample allowance, and one which from certain sources we know will exceed the actual consumption), we arrive at a total sale of, in round figures, 170,000,000, producing a gross revenue of £34,000 for the year ending December 4, 1851.

How, then, stand the estimates of May, 13, 1850, and the experience of October 28, 1851:—

	Estimated.	Actual.
Capital account ..	£136,033 15 0	£200,806 0 0
Revenue account ..	53,333 6 8	34,000 0 0
Gas sold	266,666,667ft.	170,000,000ft.

But, says the report, "the rental for the half-year ending the 29th day of September last, being the two light summer quarters, was £13,203. 15s. 3d.; and the yearly consumption calculated at this rate, without the progressive increase which we are obtaining, will be at the rate of £53,000 per annum!" We were at first attempted to believe that the 5 and 3 had *accidentally* changed places in this estimate, but we are reluctantly forced to the conclusion that it is a deliberate and wilful misrepresentation, justly meriting the strong language which Mr. Pearse has applied to other similar official statements of the company. Mr. Dakin will be puzzled to find an independent English gas engineer of any standing who would, upon the basis of a rental of £13,200 for the two summer quarters, estimate the rental for the two winter quarters at more than £25,000, and we shall see by the next balance-sheet what credence is to be given to estimates so recklessly put forward.

The assertions that the works, when the additions now in progress are completed, will be equal to producing 420,000,000, and to the distributing of 800,000,000 cubic feet of gas per annum, are all of the same character. The figures are quite overwhelming; but we have seen how, with a consumption of 170,000,000 feet, it has been deemed prudent to extend the works, and set the law at defiance, by ripping up at midday the leading city thoroughfares for the laying of mains of increased dimensions, while the jobbing guardians of the public interest shut their eyes to the flagrant violation of the law. Why the necessity for all this till the present powers of the works were exhausted? Why pledge the property for £50,000, if they were capable of manufacturing and distributing 320,000,000 feet of gas per annum? Only two answers are possible. Either the directors have unnecessarily lavished their constituents' funds, or their adopted reports as to the capabilities of the works are untrue.

But we have not yet done with the subject. Although we hear nothing more about reducing the price of gas to 3s. 4d. per 1000 feet, and maintaining at the same time a 10 per cent. dividend, still the prospect of the latter is held up as being in store. A greater potentate than Mr. Dakin has resolved the same problem, and proved the possibility of a concern with an open capital account paying ten pounds per centum per annum as dividend, where ten pence had not been earned. Now, though we would fain hope there is one, if not more than one, at the Great Central Gas Board, who has no ambition to play the part of the mandarin figure, and nod his assent to all that a duplicate Hudson may propose, yet we cannot but remark the absence from the debit side of the profit and loss account of some important items which figure even in Mr. Croll's estimate of May 13, 1850. The debits are composed of payments "for wages, salaries, general charges, including office charges, advertising, and miscellaneous charges, stationery, books, &c., rates and taxes, gas making," and amount to £15,175. 11s. 8d. leaving an apparent profit of £11,212. 12s. 11d., something more than half the estimated profit, but still declining all acquaintance with the following items of Mr. Croll's own estimate of the sums requisite to be set aside for covering these contingencies:—

	£	s.	d.
Bad debts (included with the cost of collection) at..	1600	0	0
Law expenses	200	0	0
Directors (confirmed by vote of general meeting of July 1, 1851)	1000	0	0
Maintenance of works, 1 per cent. on capital (£172,850)	1728	10	0
Wear and tear of meters, 7½ per cent. on their value	754	13	9
	£5283	3	9

A tolerably handsome discount upon the profits. The figures are not ours; they are Mr. Croll's; and we ask why they are not charged in the profit and loss account? We know that the company have not escaped the fair share of bad debts experienced by all who are doing what is commonly called "a pushing trade;" and it will require something like a miracle to prevent dilapidation of buildings and plant, or to ensure perpetual duration of dry meters, however excellent they may be.

Again; £25,000 has been already borrowed on mortgage, and £25,000 has still to be similarly provided; yet nothing is charged for interest. Capitalists are not often found willing to lend their money gratis, and the suspicion is therefore involuntarily forced upon us that something will be claimed under this head. Call it only at the rate of four per cent., and we have an additional charge of £2000 a year; so that it is really a question whether there actually remains more than £4000 divisible as dividend out of the earnings, from Dec. 4, 1850, to Sept. 30, 1851, on the £147,850 paid up by the shareholders.

An assertion was hazarded that the consumption of gas in the City of London had increased from 450,000,000 feet to 750,000,000 since the lowering of the price. We have, however, the best authority for asserting that it is still considerably below 600,000,000 feet.

We have thus passed in review the various topics brought forward at the meeting. The only figures we have used not to be found in the report, and in the estimates of the company's engineer, are the estimate of 38,000,000 feet as the consumption of the 64 days intervening between the 1st of October and the 4th of December. We render full justice to the indomitable energy with which the concern has been carried to its present stage; but we could have wished to see it effected by less misrepresentation, and a stricter adherence to truth and candour.

Correspondence.

ON THE ANALYSIS OF COAL GAS.

SIR,—We are told on high authority that "a soft answer turneth away wrath;" and, as it is most painfully obvious that Mr. Leigh is highly enraged with my last communication, I shall endeavour to render the present one as soft as possible, for the double purpose of restoring this gentleman's equanimity, and bringing his future remarks within the customary courtesies of epistolary correspondence. Indeed, from the urgent necessities of the case, prudence suggests to me the employment of the blandest style that can be imagined; and hence, were I able to write, as Bottom, the weaver, promised to roar, "softly as a sucking dove," I should assuredly do

so at the present time, with a view to mollify Mr. Leigh's indignation, and reduce the painful excitement under which he evidently labours. Anger is said to be a short madness; and, as insanity has its privileges, I willingly pass over in silence those portions of Mr. Leigh's letter which have personal reference to myself. These are but the ebullitions of a temporary frenzy, with which his cooler judgment had no concern, and for which he can scarcely be said to be morally responsible; nor do I doubt that he is now heartily sorry at their publication, especially as he must begin to perceive that, like a gnat in a sunbeam, I only gather importance from being placed in the full blaze of his resentment.

Mr. Leigh denies that coal-gas is fully saturated with moisture, for he "collects it in a dry tube, and very seldom finds it fully saturated." De Saussure and Clement found that all gases, standing for a short time over water, became fully saturated with moisture; and, if this be not the case in an ordinary gasholder, when can it ever happen? I would quote some experiments of my own upon London gas, and also others made in Paris, but Mr. Leigh thinks it "impossible that I can ever have analysed a sample of coal gas in my life." I leave him therefore to reconcile his observations with those of the philosophers just mentioned.

It will be remembered that, in commenting on Mr. Leigh's anhydrous sulphuric acid process, I made the following remark:—"No doubt Mr. Leigh has a mode of using his anhydrous sulphuric acid, but surely it admits of a better explanation than this?" Well, it turns out that this supposition of mine was true to the letter; Mr. Leigh uses the acid in a fused state, and saturates, not a ball of coke, but a red-hot ball of coke, with anhydrous sulphuric acid. The difference is manifest; and I would congratulate your readers upon the information thus gained, but for a fact of some importance, and the knowledge of which induced me to be thus solicitous of learning Mr. Leigh's mode of procedure. Berzelius, in commenting upon anhydrous sulphuric acid says,—"When this acid has *once* become solid, it cannot be again fused without *particular* precautions, for the temperature at which it volatilises is so little superior to that at which it melts, that the mass is frequently thrown out of the vessel. The best way to obtain it in a liquid state is to put it into a well-stoppered bottle, and leave it in a warm place, the temperature of which may be 77° Fahr.; in this way it slowly liquifies." The readers of the JOURNAL OF GAS LIGHTING will, therefore, use their own discretion in plunging a red hot ball of coke into such a substance. Not that I impugn Mr. Leigh's statement of what he does, for many of us have witnessed a juggler swallow a pointed sword with perfect ease and safety, though such a feat is beyond every-day imitation. Mr. Leigh, therefore, no doubt, does saturate a ball of coke as he says, but, having once experienced a lamentable accident from the fusion of anhydrous sulphuric acid, I consider it a duty thus to warn others, as the projection of the smallest particle of it into the eye would infallibly injure or destroy that organ.

In my previous letter I had asserted that "in my hands phosphorus entirely failed to remove oxygen from coal gas or from light carburetted hydrogen." Mr. Leigh thinks proper to omit the latter part of this quotation, and introduce an argument concerning olefiant gas and Professor Graham. Instead of clarifying this obfuscated effusion, I shall merely beg to be understood as repeating my former assertion, and will shortly explain to Mr. Leigh how it happens that, under the circumstances, phosphorus has no action upon oxygen. First, however, let me remark upon Mr. Leigh's statement, that, had I "passed a ball of moistened phosphorus into the gas, volumes of white vapours would have poured down from the phosphorus, amply visible even to my eyes." Now, although I have nothing to do with Mr. Leigh's "vapours," whether white, grey, or brown—yet I feel compelled to do justice to an amount of optical perfection quite superhuman. According to Mr. Leigh's own analysis, none of the gases he examined contained so much as one per cent. of oxygen, and the London gas had less than a half per cent. ('46). How any mere mortal vision could therefore see "volumes of white vapours" under such circumstances is to me incomprehensible. Now it happens that Berzelius, after enumerating a long catalogue of substances which prevent the action of phosphorus upon oxygen gas, mentions, amongst others, bisulphuret of carbon, a compound always existing in coal gas, though not included in the analytical returns of Mr. Leigh, malgré the "barometer, thermometer, and other standard instruments," and the "meniscus" allowance. No; Mr. Leigh, "horribile dictu," knows nothing of bisulphuret of carbon; a ten years' experience even has left him ignorant of the most remarkable properties of this constant ingredient of coal gas. But, as I have said, after enumerating a long catalogue of substances which prevent the action of phosphorus on oxygen gas, Berzelius especially alludes to bisulphuret of carbon, and *nothing* is easier than to demonstrate that atmospheric air, containing only $\frac{1}{1000}$th (one part in one thousand!) of its bulk of the vapour of bisulphuret of carbon is totally unacted on by phosphorus. Four-fifths of a grain of this singular compound, introduced into a carboy containing 1000 cubic inches of air, will expand into one cubic inch of the vapour of bisulphuret of carbon, and produce a mixture, upon which, at common temperatures, phosphorus has no action. There is a beautiful experiment connected with this property, which I am surprised to find that Mr. Leigh is ignorant of. If into a quart bottle, containing atmospheric air, a single drop of bisulphuret of carbon is allowed to fall, and the whole agitated for a minute or two, the air becomes impregnated with the vapour, and acquires the power of extinguishing the luminosity of a rod of phosphorus dipped into it. If this experiment be made in an obscure place, and the phosphorus alternately dipped in and withdrawn from the bottle, the phenomena are very remarkable, as one half of the phosphorus may be kept luminous, whilst the other, being within the neck of the bottle, is extinguished. I have kept phosphorus in air of this kind for months, without any of its oxygen disappearing, though the air takes on peculiarities of another description, to which, at a future period, I may have occasion to refer. Now, since coal gas seldom contains less than $\frac{1}{1000}$th of its bulk of the vapour of bisulphuret of carbon, and the oxygen in it is less than one per cent., according to Mr. Leigh, there need be no great surprise at finding phosphorus as inactive as my experiments have proved it "in my hands." And probably Mr. Leigh is by this time in a mood to appreciate the remark of Berzelius upon this subject—"*Cette propriété de phosphore le rend impropre pour absorber l'oxygene d'un melange de gaz.*" This property of phosphorus renders it unfit for the absorption of oxygen from a gaseous mixture. I may here state that Mr. Alex. Wright, who has paid considerable attention to this question, has found the amount of bisulphuret of carbon in coal gas to vary very much at different periods of the charge, and to be greatly affected by comparatively small increments of heat in the retort furnace.

It is not improbable that Mr. Leigh will seek to shelter himself behind the supposition that some one of the numerous agents he employs may have the effect of removing the bisulphuret of carbon from the gas he examines; this, however, he will find, on trial, to be a fallacious hope. In Mr. Leigh's original dissertation, "a solution of pyrogallic acid" is spoken of for the removal of oxygen, and, as this substance has no such property, I ventured to surmise that pyrogallate of potash might possibly be the article employed. In this supposition, as in the anhydrous acid, I am, it appears, absolutely and wholly correct. Mr. Leigh pretends that he meant us to understand that part of the potash is to be left in the eudiometer tube; but, as there is no difference expressed between the mode of using the potash and that practised with respect to the anhydrous sulphuric acid and oxide of manganese, these also must remain on Mr. Leigh's principle. My remarks, as everybody knows, were applied to coal gas; yet a miserable quotation from "the illustrious Liebig" is dragged in, relating to the analysis of atmospheric air, as if this had anything to do with the subject matter of my observations. Phosphorus, which will not answer at all "in my hand" for the removal of oxygen from coal gas, does so perfectly well with atmospheric air. But, now that we have got the "illustrious Liebig" at our disposal, I have a question to ask:—Does he advertise for analytical business? If he does, his name has some connection with Mr. Leigh's letter; if not, he may return to Giesen, for he is of no use either to Mr. Leigh or myself. The vapour of the bisulphuret of carbon prevents the perfect action of pyrogallate of potash, though not in so striking a manner as with phosporus; hence I have used the expression, "a limited power of this kind," and to this I adhere. There is, however, positively no end of Mr. Leigh's *illustri* and *illustrissimi*. Here is another, named Kolbe! I wonder does *he* advertise? Well, Kolbe, it appears, has shown that the formation of nitric acid depends upon "the high temperature produced during the explosion." Very well, Mr. Kolbe, we will argue the matter on this supposition, although some people imagine that the formation of water during the explosion has more to do with it. But how is this high temperature to be reduced? An explosion is a rapid combination, which can scarcely be said to occupy any time in its completion; it is, in the strictest sense of the word, the work of an instant. Now, chemists of the present day have arrived at the conclusion that, whenever and however burnt, a combustible gives out always the same amount of heat, provided the combustion be perfect. Iron, for example, rusting in the air, is supposed to evolve exactly as much heat as a like quantity burnt in oxygen gas, the only difference being, that in one case the operation, by spreading its effects over a long space of time, becomes insensible at any given moment, whereas in the other the whole heat is condensed in the space of a few seconds, and assumes a proportionally vehement character. As, however, Mr. Leigh's explosion is an explosion, the temperature must be the same, whether he dilutes, as he calls it, or not, the only reduction being the imperceptible amount due to the latent heat of the extra gas, which, it is needless to say, during the compressive effort of an explosion, can produce no action whatever. But perhaps Mr. Leigh will permit me to oppose the opinion of Berzelius to the non sequitur conclusion of Mr. Kolbe—that is, if Mr. Leigh has fairly quoted Kolbe. In commenting on the artificial production of nitric acid, Berzelius says—"The formation of this acid never succeeds better, as an experiment, than when two parts of hydrogen and one part of nitrogen, by weight, are made to pass together through the same tube, and burnt in an atmosphere of oxygen gas, in an apparatus similar to that used for demonstrating the production of water from hydrogen;" that is to say, in the greatest possible excess of oxygen. Berzelius also adds—"Meantime there is a circumstance to which attention has not been directed, and that is, that nitric acid is formed only when

water or some other oxidised body is present, with which the acid is able to combine; so that it is not *merely* the elevation of temperature, but also the presence of water, which facilitates its formation." "*De manière que ce n'est pas seulement l'élévation de la température, mais aussi la présence de l'eau, qui facilite sa formation.*" (Œuvres de J. J. Berzelius, tome premier.)

I now come to the mode of computing the specific gravity of a gaseous compound, of which Mr. Leigh asserts that I am ignorant. In return for the trifling information contained in the previous part of this letter, I may now therefore ask, with a good grace, for a specimen of Mr. Leigh's knowledge to enlighten my darkness. Mine is a plain, vulgar, rule-of-three method, which Mr. Leigh despises and condemns. He will not, consequently, adopt it, I hope, in his answer. This would be cruelly ungrateful. Your readers, therefore, may expect something new; and, to prevent mistakes as to identity, I will enter into a somewhat lengthy explanation, so as to elucidate the matter, and secure a proper line of demarcation between the rival systems. For this purpose, however, I must quote the following table of specific gravities compiled by Dr. Ure:—

	Sp. Gravity.	Weight of 100 cubic inches.
Hydrogen	·0694	2·118 grs.
Light carburetted hydrogen	·5555	17·000 „
Carbonic oxide	·9722	29·650 „
Olefiant gas	·9722	29·650 „
Carbonic acid	1·5277	46·596 „

Now, Dr. Frankland's analysis of the Manchester gas, having a specific gravity of ·52364, was as under:—

Olefiant gas	5·50
Light carburetted hydrogen	40·12
Hydrogen	45·74
Carbonic oxide	8·23
Carbonic acid	·41
	100·

Dr. Frankland also found "a trace of nitrogen;" but, as this is "a trace" too much, I omit it. Well, by the "golden rule," it can be shown that, if 100 cubic inches of hydrogen weigh 2·118 grains, 45·74 must weigh (errors excepted) ·96 grains; and, following the matter out, we, with the same proviso, arrive at the following conclusions:—

	Cubic inches.		Grains.
Olefiant gas	5·50	or	1·63
Light carburetted hydrogen	40·12	or	6·82
Hydrogen	45·74	or	·96
Carbonic oxide	8·23	or	2·44
Carbonic acid	·41	or	·19
In all	100·		cubic inches, or 12·04 grains.

This, assuming atmospheric air at 1000, gives ·3947 for the specific gravity of this Manchester gas, instead of ·52364. The difference is a tolerable something, and lies in estimating the olefiant gas as olefiant gas, in place of propylene, benzole, allyle, and certain other imaginary forms of what Mr. Leigh calls Hn Cn, or more correctly Cn Hn—for who knows how great a mistake I have nearly committed? I was very desirous of getting at this particular point, as, to make up the required deficit in the gravity, these 5·50 cubic inches of olefiant gas, &c., must weigh no less than 5·56 grains, or have a specific gravity of 3·28. How Mr. Leigh is to crush in his olefiant gas, which "certainly exists in the condensible portion," I cannot conceive, for even naphtha vapour, according to De Saussure and Dumas, is only 2·8724. Time, however, will perhaps show.

I have now a favour to ask of Dr. Frankland. Mr. Leigh asserts that "in Dr. Frankland's analyses the specific gravities were not tried experimentally at all, but all of them calculated from the results of the analyses." Is this true, Dr. Frankland? In answering me, it will be as well to take for granted that I am not ignorant of the mode of calculating the specific gravity of a gas or vapour, from the knowledge of its chemical composition, the amount of condensation by volume being given; nor yet am I unacquainted with the use of such calculations for the purpose of controlling an analysis. But it is quite new to me to find such things superseding the matter-of-fact application of a balance in an experimental science like chemistry. I denounce the practice "in toto" as thus applied, and refuse the slightest credence to such pen-and-ink experiments made upon an unknown and variable compound like this condensible portion of coal gas. Will Dr. Frankland tell me whether an error of manipulation is an impossibility at Manchester; and, if such a thing has happened, how about the specific gravity? Besides, several of these compounds are vapours, and, therefore, follow the law of Marriotte in their contractions and expansions.

In conclusion, let me prove to Dr. Frankland how much he is really indebted to me for warning him from the rock upon which his professional character and respectability as a chemist were about to split. Occupying an honourable position in a large collegiate institution, was it fit that he should descend into the arena, and struggle with such competitors as Moses and Son, Dr. Edy, Morrison, Old Parr, or even the more polished and shining firm of Day and Martin? Dr. Frankland must see, in a moment, the incongruity of such an association. But, more than all, he must, on reflection, discover the folly of that cupidity which prompts so unusual a course. Supposing the whole profession to adopt this ventilating process, where would be the individual advantage? When all puffed alike, all would occupy their present relative positions; and the only result must be, the self-infliction of a perpetual income-tax, from which not even Parliament could relieve us. The argument need be carried no farther at present.

London, Nov. 1, 1851. LEWIS THOMPSON.

IS LOW-PRICED GAS CHEAP GAS?

SIR,—Will you be pleased to enlighten me as to a mystery that is now, and for some time past has been, performing to a considerable extent; I mean the increased amount of gas registered, in many cases, where there has been no alteration in the number of lights or in the hours of burning. The fact is patent; the explanation is what I seek. You may, perhaps, smile at the ignorance of one whose business it is to acquaint himself with the practical application of gas; but I have never yet heard a satisfactory solution of this problem, and it has recently been brought very prominently before me in the case of a large public institution, whose work I do, and the register of whose meter I take every month. There has been no alteration whatever in the number of lights; at a given hour every night the main cock is turned off; nor has there ever been a change of servants, so as to allow the supposition of its being more wastefully burnt than heretofore; yet there is an enormous increase in the register.

Last week, also, one of the City companies summoned several consumers, among the rest a very respectable man, a customer of mine, for refusing to pay an obvious surcharge; yet the judge of the county court decided that the quantity registered was the quantity that must be paid for.

You may not, probably, deem the matter of sufficient general interest, or you may consider that the class of individuals among whom your Journal circulates are sufficiently acquainted with the explanation desired, or for other reasons, you may, perhaps, not judge it expedient to give a public and printed reply; and, if so, would you favour me with a written one? C. J. JONES.

36, *Monkwell-street, City, November* 3, 1851.

We cannot do better than refer the writer to the following extract from the leading article of our July issue. The gas consumers of the City of London have had fair warning from us of the consequences of the course they were taking, and they have only themselves to thank for the results indicated in the above communication:—

"As the question of price had then been to a considerable extent conceded, it became necessary to enlist other considerations, and here we find the promoters of the Great Central Gas Company resorting to disgraceful impositions and unfair experiments, with the object of proving that the gas then being supplied was impure and of inferior illuminating power. They are detailed at length in Dr. Leeson's evidence given before the Committee of the House of Commons, on May 10, 1850. From it we learn that, on the evening of the 8th of October, 1849, he tried various experiments, commencing, at seven o'clock, at Messrs. Croll and Glover's factory, in Clerkenwell, upon the gas supplied from the Brick-lane station. At eight o'clock we find him in Moorgate-street, testing the gas from the Curtain-road station; and an hour later in Fleet-street, similarly operating upon that of the City of London Gas Company. These experiments gave, according to his report, an average value of about 8½ candles, consuming 132½ grains of sperm per hour for the 5-ft. argand burner; and he accordingly advised his employers to adopt the standard of 9½ such candles for the 5-ft. burner; *and this is the standard of quality upon which Mr. Croll's subsequent contract for its manufacture is actually founded.* Any one, however, who is even superficially acquainted with the subject, will at once see, from the manner in which these trials were conducted, that in no case was the pure gas, uncontaminated with atmospheric air, ever obtained; for the time occupied in taking down the apparatus, conveying it to places distant from each other, and reconnecting it, cannot have left more than a quarter of an hour for the duration of each experiment; and the passage of one cubic foot and a quarter of gas through an experimental dry meter, to which atmospheric air had been admitted at each change of place, must have produced a mixture, into the composition of which the air entered largely. Unlike the wet meter, each chamber of which is successively filled with unadulterated gas, and then entirely emptied, the action of a dry meter when first set in operation is to deliver mixtures of gas and atmospheric air, the proportion of the latter diminishing with each stroke of the pistons, but still requiring a considerable quantity to be passed through it before the undiluted gas can be obtained. That such was not the case in Dr. Leesons's experiments is certain, from the fact that more carefully-conducted ones gave at the same period an illuminating power within a fraction of 13 candles (of 132 grains), and this continues to be to the present day the standard of the gas supplied to the public by the City of London Gas Company, from Newcastle coal unmixed with cannel.

"By this juggle, however, the citizens of London have the prospect of enjoying for the future reductions of 25 per cent. in price, and 37 per cent. in the quality of the gas they consume; or, in more intelligible language, they must now consume 13,700 feet of gas, at a cost of £2. 14s. 10d., to give the same light as would have been given by 10,000 feet of the quality supplied by the old companies, the cost of which, at 5s. per 1000 feet, would have been only £2. 10s.

ON THE ILLUMINATING POWER OF NEWCASTLE CANNEL GAS.

SIR,—I beg to hand you a tabulated statement of a number of experiments on the illuminating power of Newcastle cannel gas, when consumed in the burners used in London for gas of this quality. I have put them in exactly the same form as the experiments by Mr. King on Wigan gas, given at page 142 of your Journal, so that they may be the more easily compared together;

but I have also added other tables, which I think will better illustrate the exact economic point of each burner, and the stages through which it approaches to and recedes from that point.

The No. 1 Scotch fish-tail burner gives a flame fully spread with ·85 inch pressure, and when burning at the rate of 1·4 feet per hour, beyond which point it begins to show streaks of blue.

The No. 2 Scotch fish-tail is fully spread with ·9 inch pressure, and when burning at the rate of 2·4 feet per hour.

Guise's burner is an argand with twenty-six holes, the inner diameter of the ring being $\frac{6}{10}$ inch, and the outer $\frac{8}{10}$ inch. It has a metal button, $\frac{8}{10}$ inch diameter, one inch above the face of the burner. The glass chimney is a straight cylinder, 2 inches diameter and 6 inches long.

With $\frac{3}{10}$ inch pressure, and a consumption of 4·5 feet per hour, the flame becomes irregular, and has a tendency to deliver smoke.

The standard candle I used consumed 130 grains per hour, and for this, to ensure a greater regularity of flame, I substituted a No. 2 fish-tail, burning ·4 feet per hour, which I found exactly equal to the candle.

In the first of the following tables the results are multiplied by 130 and divided by 120, so as to reduce them to a standard candle of 120 grains per hour, as done by Mr. King:—

Scotch Fish-tail No. 1.

Consumpt. per hour.	1 foot.	1½ foot.
1 foot = candles . .	4·875	5·02
1 foot = grains of sperm	585·	602·

Scotch Fish-tail No. 2.

Consumpt. per hour.	1 foot.	1½ foot.	2 feet.	2½ feet.	3 feet.
1 foot = candles . .	5·05	5·77	5·95	5·84	5·53
1 foot = grains of sperm	606·	690·	714·	700·	663·

Guise's Argand.

Consumpt. per hour.		1½ foot.	2 feet.	2½ feet.	3 feet.	3½ feet.	4 feet.	4½ feet.
1 foot = candles . .	..	1·08	1·85	3·12	4·85	4·95	5·77	6·74
1 foot = grains of sperm	..	129·	222·	374·	582·	594·	692·	808·

For the reason before stated I, however, prefer the following form of quoting the above results:—

SPERMACETI CANDLES OF 130 GRAINS PER HOUR.

No. 1 Scotch Fish-tail

Gives light = . .	⅛	¼	½	1	2	4	6	8 candles.
When burning . .	·15	·2	·3	·4	·6	·9	1·3	1·8 feet per hour.
Feet of gas required to produce a light = one candle . . .	1·2	·8	·6	·4	·3	·225	·217	·225

No. 2 Scotch Fish-tail

Gives light = . .	⅛	¼	⅓	1	2	4	6	8	10	12	14	16 candles.
When burning . .	·15	·2	·3	·4	·6	·9	1·2	1·5	1·8	2·2	2·6	3·2 feet per hour.
Feet of gas required to produce a light = one candle . . .	1·2	·8	·6	·4	·3	·225	·2	·1875	·18	·183	·185	·2

Guise's Argand

Gives light = . .	2	4	8	12	16	20	24	28 candles.
When burning . .	1·7	2·1	2·6	3·1	3·5	3·9	4·2	4·5 feet per hour.
Feet of gas required to produce a light = one candle . . .	·85	·525	·325	·258	·219	·195	·175	·160

London, Nov. 1, 1851. ALEXANDER WRIGHT.

WHITE'S HYDRO-CARBON GAS.

SIR,—Since the appearance of Dr. Frankland's interesting paper on this subject, inserted in the JOURNAL OF GAS LIGHTING for July last, I have been anxiously looking for its promised continuation, in the shape of a report on the same process as applied to cannel coal.

A circumstance has, however, come to my knowledge within the last few days, which may explain the cause of the delay, and I believe it further demonstrates the whole process to be a perfect failure. I am informed that, at the earnest solicitation of Mr. White, who pledged himself that he could produce from one ton of Lesmahago cannel 27,000 feet of gas equal to that from Wigan cannel, the directors of one of the largest metropolitan gas companies deputed the superintendent of their principal station, accompanied by an eminent analytical chemist, both persons of high honour and perfectly disinterested, to proceed to Manchester, and there test the accuracy of Mr. White's assertions.

They accordingly proceeded to Messrs. Clarke's mill, and were attended, on the 18th and 19th ultimo, by Mr. Ginty, the manager, on the part of the patentees, Mr. White's other arrangements preventing him from accompanying them. The result of six experiments, continued throughout the greater part of two days, gave a maximum produce of only 16,000 feet of gas per ton, the great bulk having only *one seventh of the promised illuminating power*, and in no case did it exceed one third; in fact, at one time the light was only equal to three candles, with a consumpt of seven feet per hour. Now, as Lesmahago cannel will, when treated in the ordinary manner, yield about 11,000 feet of gas per ton, 50 per cent. superior in illuminating power to the gas from Wigan cannel, Dr. Fyfe's report that the effect of water, as used by Mr. White, is *nil*, and worse than *nil*, is most amply confirmed. Dr. Frankland's report on the resin and water gas ought to have commenced with an examination of the illuminating value of pure unadulterated resin gas, without which his subsequent experiments are practically worthless.

Mr. Ginty himself was forced to admit the complete failure of the experiments, and Dr. Frankland's presence on the first day failed to have any beneficial influence on the result. One of the gentlemen present described the light obtained as "the ghost of a gaslight," and the performance terminated with instructions to the stoker to charge all the retorts with cannel alone, "or they should have a repetition of the old complaint." What that might be, I leave your readers to draw their own conclusions upon.

London, Oct. 30, 1851. TIMOTHY TICKLE.

Register of New Patents.

THOMAS GREAVES BARLOW, of 32, Bucklersbury, in the city of London, civil and consulting gas engineer, and SAMUEL GORE, of Park-road, Old Kent-road, in the county of Surrey, engineer, for "*Improvements in the treatment of certain substances used in the production of gas for giving light and heat, and of some of the products of the said substances; as also in the apparatus employed in the manufacture of such gas, and in discharging and giving motion to gas.*" Patent dated April 15, 1851.

This invention consists, firstly, in certain improved modes of treating certain substances for producing gas, and some of the products thereof.

Secondly, in improvements in the arrangement of retorts, valves, and apparatus adapted for the manufacture of gas.

Thirdly, in an improved apparatus for discharging and giving motion to gas, and adapted for withdrawing the gas from the retorts, or forcing it through the mains.

The drawings show a front view, a longitudinal section, and a back view of a bench of three retorts, with valves and pipes, adapted for the purposes of the invention. The three retorts are provided at each end with mouthpieces and lids, secured by screws in the ordinary manner. There is a three-way pipe connecting all the retorts at one end, and provided with three valves, or a three-way cock, for closing the passages. The rising pipes are from the opposite ends of the retorts. These pipes are connected with three slightly inclined pipes passing from front to back of the bed, which communicate with each other by a three-way pipe, in which are three valves, or a three-way cock. Vertical dip pipes descend from the pipes and enter the hydraulic main, where they are sealed by dipping into the liquid contained in it. The dip of these pipes may be increased by means of cups, which pass through stuffing boxes at the top of the vertical pipes, and are capable of being raised and lowered by means of levers and rods. The slightly inclined pipes pass through a cistern, which is supplied with water for the purpose of cooling the gas; or the same object may be attained by allowing water to flow into the slightly inclined pipes, whence it will escape through the hydraulic main. A

pipe is fixed leading from a steam-boiler, and furnished with branches connected to the retorts, and provided with cocks.

This apparatus is used in the following manner:—The retorts are, in the first instance, all charged with cannel or other rich bituminous coal, and all the gas valves are opened and the steam-cocks closed, and the charges are worked off in the usual manner. The charge of the first retort is then withdrawn, and it is recharged with coal. The other retorts are not recharged, but the residue of the first distillation is left in them. Steam is now allowed to enter the third retort, where it will be decomposed by the incandescent coke, or residue, and converted into hydrogen, carbonic oxide, and carbonic acid gases, which, with any excess of steam, will traverse the pipes and valves, and enter the second retort. The excess of steam will, however, be condensed in its passage, and the gases so deprived of steam will pass through the coke in the second retort, where the carbonic acid will become converted into carbonic oxide. The removal of the undecomposed steam in this manner is important, as it permits of the conversion of the carbonic acid into carbonic oxide in the second retort, which is not easily effected when an excess of steam is present. The gas passes from the second retort, through the three-way valves, into the first retort, where it mingles with the rich gas from the fresh charge of coal, at the same time becoming itself carburetted by the bituminous products of the distillation of the coal. The whole of the gas then passes into the hydraulic main.

When the charge in the first retort is worked off, it is not withdrawn, but left in the retort, and the charge in the third retort is withdrawn, and it is recharged with coal. The steam is then allowed to enter the second retort, where it will be partially decomposed, and will then pass through the pipes and valves, where the excess of steam will be condensed, and the remaining gases will then pass over the coke remaining in the first retort as the residue of the previous operation. The carbonic acid gas will thus be converted into carbonic oxide, and the mixture of carbonic oxide and hydrogen thus obtained will pass into the third retort, where it will unite with the hydrocarbons resulting from the decomposition of the fresh charge of coal, and the whole of the gas will pass into the hydraulic main.

In like manner, when the charge in the third retort is exhausted, it is not withdrawn, but allowed to remain in the retort, and the second retort is then emptied, and recharged with coal. The steam is then allowed to enter the first retort, where it is partially decomposed, and the excess of steam is condensed in its passage through the pipes and valves, and the gases will then enter the the third retort, and, after traversing that retort, will enter the second retort, and unite with the gases and other products given off from the new charge of coal. The whole of the gas will then pass off into the hydraulic main. When the charge in the second retort is worked off, the first retort is emptied and recharged, as already described, and the operations thus follow one another in continual succession.

In this mode of operating, the residue from each charge when it is worked off, in place of being immediately withdrawn and replaced by a fresh charge, is, on the contrary, retained in the retort, and employed in the production of gases of small illuminating power, for mixing with the richer gases given off from the fresh charge which is introduced into another retort. This mode of treatment is applicable to ordinary coal, especially the richer or more bituminous sorts, cannel coal, bituminous shales, or schists, asphaltes, lignites, resinous earths, and other similar substances or mixtures of the same. In place of employing three retorts, as above described, two may be employed, and in that case each retort is emptied and recharged when the charge in the other retort is worked off. The steam is admitted into the retort containing the exhausted charge, and the gases there produced pass through the retort containing the fresh charge, and thence into the hydraulic main. The gases may either pass at once from one retort to the other, together with any excess of steam which may have escaped decomposition, or they may be conducted through a condenser and cooled, so as to remove the steam, and then introduced into the retort containing the fresh charge; and it is stated to be preferable so to remove the excess of steam before introducing the gases into the retort containing the fresh charge. In thus employing two retorts in place of three, the three-way valves or cocks are not required.

Another mode of conducting the process consists in employing a single retort, with a mouth-piece and outlet-pipe for the escape of the gas at each end of the retort, and also a steam-pipe and cock for the admission of steam at each end. The outlet-pipes communicate with the hydraulic main, and are provided with cups, as in the case of the arrangements hereinbefore described. Each half of the length of the retort is charged alternately, when the charge in the other half is exhausted, and the steam is always admitted at the end containing the exhausted charge, and the gases allowed to pass off to the hydraulic main from the opposite end of the retort. The steam is thus decomposed by the exhausted charge, and the resulting gases unite with those evolved from the fresh charge.

The form of the retort itself is not material. Thus, in place of employing a long retort, and charging it alternately at each end, a shorter retort, furnished with a partition or diaphragm, may be used, and each compartment may then be charged alternately, when the charge in the other compartment is exhausted. When it is not desired to condense the excess of steam in the passage of the gas from one compartment to the other, it is sufficient to make the partition rather shorter at the back end than the retort, so that the gases may pass round it. The partition extends completely up to the front end of the retort, and the two compartments are closed by separate lids.

When, however, the gases are to be cooled in their passage from one retort to the other, the partition must extend from end to end of the retort, and pipes must be connected from each compartment to the condenser. At the other end of the retort, pipes lead from each compartment to the hydraulic main, where they are provided with cups, and a steam-pipe and cock is also connected to each compartment, as in the other arrangements hereinbefore described.

When it is inconvenient to introduce the steam-pipe at the opposite end of the retort to that at which the gas escapes, it may be introduced at the same end, by connecting a pipe within the retort to the steam-pipe carrying it along to the opposite end of the retort, and allowing the steam to return over or through the incandescent charge to the outlet-pipe. This internal pipe may be a continuation of the steam-pipe, or it may be a separate piece of pipe, which may be pushed under the charge, or otherwise placed in the retort, and then connected to the steam-pipe.

In place of using steam of the temperature of 212 degrees of Fahrenheit's thermometer, or thereabouts, steam of much higher temperature may be employed with advantage. For this purpose the steam is conducted through pipes exposed to a high temperature, so as to overheat the steam, and raise its temperature above that due to its pressure, and the steam may be advantageously heated to a temperature of 600 degrees of Fahrenheit's thermometer and upwards, the steam pipe being bent into a loop or convolution, which is introduced into the furnace or oven which contains the retorts. The steam, in passing through this pipe, becomes overheated. The steam-cock is most advantageously placed, so that it may not be traversed by the overheated steam.

All these arrangements of retorts and their appurtenances are applicable to the same materials as the first-described arrangement of three retorts, and in each case it will be observed that each retort, or portion of a retort, is emptied and recharged, when the charge in the other, or one of the other retorts, or portion of a retort, is exhausted, and that the exhausted residue of each charge is left in the retort, or portion of a retort, and employed in the production of hydrogen and carbonic oxide gases, which are afterwards passed through the other retort, or retorts, or portion of a retort, and brought in contact with the fresh charge.

In gas works conducted on a large scale it will generally be found most advantageous to manufacture the mixture of hydrogen and carbonic oxide gases in separate retorts devoted to that purpose, instead of adopting the alternating system hereinbefore described. In this case the steam is first passed through a retort, or retorts, charged with coke, or other solid residue of the distillation of the substances above mentioned, or other solid carbonaceous material, from which the gas has been extracted, either in their natural state, or sprinkled with a solution of carbonate of soda or carbonate of potash, and the resulting mixture of gases and steam is then passed through a condenser or cooler, so as to remove the excess of steam, and the gas is then deprived of its carbonic acid by passing it through another heated retort or retorts, containing coke or other suitable residue. When gas is required merely for heating purposes, the process may be stopped at this point; but when gas for giving light is required, the mixture of hydrogen and carbonic oxide thus obtained is then conveyed into another retort or retorts, in which fresh charges of coal, cannel, bituminous shale or schist, asphalte lignite, resinous earth, or other similar substances, or mixtures of the same, are undergoing distillation, or in which tar, melted resin, resin oil, oils, fatty liquids, or other liquid or fusible hydrocarbons are undergoing decomposition. The quantity of the mixture of hydrogen and carbonic oxide employed must depend upon the richness of the coal, or other carbonaceous material undergoing decomposition, and on the illuminating power of the gas required to be produced.

In lieu of passing the mixture of hydrogen carbonic oxide and carbonic acid gases, after the condensation of the steam, through a second retort, as above described, the carbonic acid gas may be separated before their introduction into the carbonizing retort, by passing them through lime, carbonate of soda, protoborate of soda, or other substances capable of absorbing carbonic acid. The lime may afterwards be deprived of its carbonic acid by calcining it, and may then be used over again. The carbonate of soda and protoborate of soda, after becoming saturated with carbonic acid, may be rendered again fit for absorbing carbonic acid by simply boiling their solutions, which will expel the carbonic acid, or a portion of it. Whatever mode, however, may be employed for removing the carbonic acid gas, the mixture of gases is always to be cooled in a condenser or otherwise, so as to condense the excess of steam which is contained in it.

It is convenient to put a gasholder in communication with the pipe which conveys the mixture of hydrogen and carbonic oxide gases to the retort or retorts in which the richer gases are produced, so as to equalize any irregularity in the production of the hydrogen and carbonic oxide gases, as the gasholder will receive any temporary excess, or supply any temporary deficiency, in their production.

An improved method or methods of treating tar, melted resin, resin oil, oils, fatty liquids, and other liquid or fusible hydrocarbons, or mixtures of hydrocarbons, is next described. For this purpose the patentees employ the same arrangements of apparatus which have been already described in detail, with the addition of a pipe and cock communicating with each retort for the admission of the tar or other liquid. The pipes for the admission of tar pass through the sides of the mouthpieces, and should be continued inside the retort to a sufficient distance to prevent the tar falling and accumulating in the mouthpiece, but not so far as to endanger the carbonization of the tar in the pipe and its consequent stoppage. In operating with this apparatus the retorts are all charged with coke, or the solid residue of the distillation of cannel coal, bituminous shale or schist, or of asphaltes lignites, or resinous earths, or other solid carbonaceous substances or mixtures of the same, from which the gas has previously been extracted. Steam is then allowed to pass through one of the retorts, through the cooling-pipes or condenser, then through a second retort, and, lastly, into the third retort, into which tar or other liquid hydrocarbon is injected or suffered to drop, and for this purpose it is stated to be preferable to inject the tar or other liquid under pressure, so that it may fly over and fall upon the incandescent mass in the retort. This effect is produced by injecting the liquid by a pump, or by open-

ing a cock connected with an elevated reservoir of the liquid, by means of a clockwork motion or other regular motion, which opens and closes the cock at regular intervals of time.

The handle or lever of the cock is moved by a rod, which receives a to-and-fro motion by means of a crank, or is otherwise driven by the clock-work or other motive power. This rod is capable of being fixed at various distances from the centre of the cock, so as to enable the amount of opening to be varied, and more and less tar to be admitted at pleasure. In place of an ordinary cock, a slide-valve or other valve may be employed, and its amount of opening varied by a variable lever in a similar manner. By these arrangements the tar-pipe may be placed at a comparatively cool part of the retort, and yet the tar or other liquid may be caused to fall upon the strongly-ignited materials in the hottest part of the retort. After a time, the coke or other residue in the third retort becomes saturated, and incrusted with a carbonaceous deposit, and is rendered less fit for decomposing the tar or other liquid. The tar is then shut off from this retort, and admitted into one of the others, and the residue, with the carbonaceous deposit, is used in the production of the mixture of hydrogen and carbonic oxide gases; and the operations are thus conducted in a regular succession, in like manner as when treating coal and similar solid matters, as hereinbefore described.

The operation of treating coal, cannel, or others of the solid matters hereinbefore mentioned, may be combined with the treatment of the tar, or other liquid hydrocarbons, in the following manner:—The operation is conducted in the manner already described with regard to coal and similar substances, until the charge in one of the retorts is exhausted, and tar or other liquid hydrocarbon is then injected, or allowed to drop upon it. After a time the supply of tar is stopped, and another retort is then emptied and recharged, and the operation conducted as before, without the admission of tar. When this charge is worked off, tar or other liquid hydrocarbon is introduced upon it, as already described with regard to the first retort, and the operations thus follow one another in regular succession. The steam employed in operating on tar or other liquid hydrocarbons, whether alone or in the combined process last described, may be employed at its ordinary temperature, or it may be overheated by previously passing it through pipes heated in the furnace which contains the retorts, or in a separate furnace, and it will be found that its decomposition is facilitated by heating it to the temperature of six hundred degrees and upwards of Fahrenheit's thermometer, particularly when acting on coke or other residue incrusted with the carbonaceous deposit from the decomposition of tar.

Another of the improvements consists in the production of gas for giving light and heat from tar, melted resin, resin oil, oils, fatty liquids, and other hydrocarbons, by subjecting them to destructive distillation, in heated retorts, partially filled with coke or other residuary solids, products of the distillation of coals, cannels, bituminous shales or schists, asphaltes lignites, resinous earths, or other similar substances, or mixtures of the said substances, upon, through, or over which a stream or an intermittent jet or jets of overheated steam is or are permitted to flow.

The steam is overheated by being passed through pipes contrived in the furnace or oven which contains the retorts, or in a separate furnace or oven, and is then introduced into the retort in either of the modes hereinbefore described. The tar, or other liquid hydrocarbon, is introduced at the same end of the retort, and the gases pass off at the other end, so that a single retort serves for the whole process. The steam may be advantageously heated to the temperature of six hundred degrees and upwards of Fahrenheit's thermometer; by which means the injurious cooling effect produced by steam of the ordinary temperature is avoided, and the decomposition of the tar is rendered more perfect.

In all the operations hereinbefore described, in which steam of ordinary temperature is mentioned as being used, it is possible to substitute water in place of the steam, and, by allowing it to drop, or be injected, into the retort, it will there be converted into steam, and act in the manner hereinbefore described. It is preferable, however, to convert the water into steam in a separate boiler, so as to avoid the cooling effect which is produced when water is introduced into the retort itself. The gases produced in the various modes above described may be purified by lime, or otherwise, in the ordinary manner, as is well understood.

The patentees have found that some varieties of the solid matters hereinbefore mentioned, particularly that description of coal known as Boghead cannel coal, after having been distilled and exposed to the action of steam in retorts, as hereinbefore described, furnishes an ash which contains a considerable quantity of alumina, in a state in which it is readily dissolved by acids, and which is capable of being used in the manufacture of sulphate of alumina; and for this purpose the ash is introduced into a pan or boiler, with a sufficient quantity of dilute sulphuric acid, and it is heated by a fire, or otherwise, so as to dissolve the alumina, and form a solution of sulphate of alumina. The boiler which they employ for this purpose has a vertical partition, perforated with holes, which divides it into two compartments. The ash of the Boghead cannel coal is placed in one compartment, and heat is applied under the other compartment. The acid liquor is thus caused to circulate through the ash, extracting the alumina from it, while the undissolved silica contained in the ash remains in the compartment which is not exposed to the direct heat of the fire, and the danger of burning the bottom of the pan, which would arise from its being exposed to direct heat, and covered with the ash, is thus avoided. The sulphate of alumina thus obtained is mixed with solution of sulphate of potash or ammonia, and the alum crystallized in the ordinary manner. Sulphate of ammonia obtained in the manufacture of gas may be used for this purpose.

In place of employing the ash resulting from the treatment by steam of the residue of the distillation in retorts of the Boghead coal, this residue may be employed in the manufacture of alum without such treatment by steam, and in that case the patentees employ such residue as fuel for heating the pans or boilers, and when it has thus been reduced to the state of ash, they place it in the pans or boilers, and treat it with dilute sulphuric acid as above described.

By treating the ash in this manner they obtain a residue of silica in a finely divided and nearly pure state, suitable for being used with advantage in the manufacture of pottery, porcelain, and glass, and which, from its finely divided state, may be used as a dentifrice and as a polishing powder.

The residue of the distillation in retorts of Boghead cannel coal and similar substances containing alumina may be treated with the dilute sulphuric acid, without previously removing all the carbonaceous matter by combustion or by treatment with steam. In this case the residue, after the extraction of the alumina, will be a porous carbonaceous material, which may be advantageously used as a decolorant, in a similar manner to that in which animal charcoal is now employed.

The third part of this invention relates to a new construction and arrangement of gas exhauster and regulator for relieving the pressure on the retorts, and forcing the gas through the mains.

The gas exhauster is a semi-rotary pump, with a rectangular piston fixed to a shaft placed in the centre of a horizontal cylinder. A segment of one-sixth part of the cylinder is divided off at the lower part of the cylinder, and is again subdivided by a transverse partition in the centre, so as to form two valve-boxes. A similar segment at the upper part of the cylinder forms two other valve-boxes. Each valve-box contains two valves, communicating with opposite sides of the cylinder. The valve-boxes at one end of the cylinder contain the inlet valves, and those at the other end contain the outlet valves. The two valves in each box are united by a connecting rod, so that they serve to balance one another, and thus reduce the power required to work them.

This exhauster is placed between the retorts and the gasholders, and serves to draw the gas from the retorts, and deliver it into the gasholders. To regulate its action, a balance-valve is placed in a "by-pass" pipe connecting the inlet and outlet, so as to allow of the return of a portion of the gas when the production in the retorts diminishes. A small gasometer is placed between the exhauster and the retorts, and balanced by a beam and balance weight. When the production of gas diminishes in the retorts, the pressure decreases slightly, and the gas returns through the balanced valve; but, if this valve should adhere to its seat, the gasometer falls, and presses, by means of rod, on a long lever connected to the valve, which is thus lifted off its seat, and its action restored. At the same time, a partition in the gasometer enters the water in which it works, and seals the passage for the gas. The stroke of the pump can be adjusted by a variable lever.

Another arrangement of two semi-cylindrical exhausters, with balanced valves on a similar construction, is also described.

Having now described the nature of their invention, and the manner in which the same is to be performed, the patentees wish it to be understood that they claim—

Firstly. The modes hereinbefore described of treating the various solid and liquid substances hereinbefore mentioned for the production of gas for giving light and heat.

Secondly. The arrangement and combination of three retorts with three-way valves or cocks, and their appurtenances, as hereinbefore described.

Thirdly. The application of a jet pipe and a pump, or an elevated cistern with a cock or valve, moved by clock-work or other regular motion, for the purpose of injecting tar or other liquid hydrocarbons into retorts.

Fourthly. The mode or modes of treating Boghead cannel coal, and similar substances used in the production of gas for giving light and heat by distillation in retorts, through which is passed a current of the gases resulting from the decomposition of water by carbonaceous matter, and the subsequent operations herein before mentioned, so as to produce sulphate of alumina, alum, silica, or decolorizing substances, as herein before described.

Fifthly. The combination, arrangement, and application of certain parts of machinery, as before described, to and for discharging and giving motion to aëriform fluids, and particularly the connecting and balancing the valves by a connecting-rod, with or without a weight and set screw, in all the different arrangements of such apparatus, when used with one or more shafts.

Sixthly. The placing of a regulator or adjuster to a gas-exhauster upon any part of the pipe (or dividing that pipe for that purpose in any part) between the retorts and the junction of the by-pass pipe with the inlet-pipe of the exhauster, or in any other position between the exhauster and the retorts, except on the by-pass pipe; or passing the gas through a regulator or adjuster, or causing a regulator or adjuster to act on the gas in any part of its passage from the retorts to the gasholder before it reaches the junction of the by-pass pipe with the inlet-pipe, as hereinbefore described.

Seventhly. The application and use of a return pipe direct from the gasholder, to supply the exhauster when the retorts are not making sufficient gas for that purpose.

Eighthly. The partitioning and dividing a gasholder or gasometer into two or more compartments, to be used for a regulator or adjuster to a gas-exhauster; and also the arrangement of such apparatus for that purpose, as shown in the drawings.

[*We are requested to state that Mr. S. Gore has by deed assigned to his co-patentee, Mr. T. G. Barlow, all his interest in the above described patent, except the right to make and use the exhauster and regulator, which is vested exclusively in the first-named gentleman.*]

Benson Stones, of Warwick-street, Golden-square, in the county of Middlesex, for "*improvements in the use and treatment of peat and its products, and other carbonaceous matters; and also for apparatus applicable to such and other chemical purposes.*" Patent dated April 15, 1851.

The improvements herein described relate to a mode of charring or distilling peat, wood, or tanner's bark, and coal together, whether

for the sole purpose of making a peculiar sort of coke, or for the two-fold purpose of producing gas, and making such a description of coke as that herein alluded to and described at the same time; and to the appliance of the greases, resins, and adipose wax, obtained from peat by distillation, to certain new purposes, and to the manufacture of peat, turf, humus, and other vegetable matter, into manure; and also to improvements in apparatus already patented by him, to assist in the treatment and manufacture of the same, and for other useful purposes.

With a view to avoid the necessity of pressing peat before charring it, in order to obtain a more or less condensed or compact fuel, the patentee contrives a system of making combined coke, which for some purposes will be found very valuable, and which consists in charring or distilling peat and a good caking coal (as free from sulphur as it can be got) together.

To accomplish this, he takes peat in a pulverised or disintegrated state, or reduces well-dried peat to a powdered state, and takes the dust of coking coal (or reduces the coal into a powder, if necessary), and mixes the two combustibles in about equal proportions, by means of a churn, made upon the principle of that hereafter described as applicable to this and other purposes.

The mixed peat and coaldust are put into retorts, so as to fill these with the compound in such a manner that the one combustible (the peat) contracting as it is charred, while the other (the coal) expands, the action of the latter shall be resisted by the retort in the outer direction, so as to force its motion inwardly, and thus form a more intimate connection with the peat, and consequently produce with it a more compact and dense material, when charred, than could be obtained from peat alone, unless it had previously undergone the expensive process of mechanically forced pressure. Of course the gas produced can be used in the charring or distilling of such a mixture of peat and coal for illuminating and other purposes, and which the patentee proposes doing when it will yield a profit; in which case he would, in some instances, pass the gas through retorts of incandescent charred peat, for the twofold purpose of completing the distillation of the gaseous products of the peat, which otherwise would in part pass off in the state of vapour and condense; thus forcing the gas to take up carbon, and so increase its illuminating property.

To obtain a more condensed form of this compound coke, the patentee in some instances has recourse to another contrivance, which is, that of additionally compressing it while it is distilling or coking.

For this purpose, a plate of iron is made to fit into the interior transverse capacity of the retort, which, by means of a screw-bar passing through the door of the retort, or any other contrivance answering the purpose, is driven by degrees against the contents of the retort as these are being coked, and so with little force or exertion presses them as much as the force of resistance of the heated retort will admit of. In the same manner wood can be used, and many other vegetable substances reduced to a pulverised or powdered state, and also tanner's bark, instead of peat. The patentee claims the charring of peat, wood, or tanner's bark, and coal together, whether for the twofold purpose of producing gas, and making such a description of coke, or for the sole purpose of making the coke.

The next improvement which the patentee describes is that of applying the greases which he obtains from peat by distillation, and which, in the specification of a former patent obtained by him, he names adiposole and adipolein, to the purpose of currying leather, for which he considers it to be superior to the oils usually employed for that purpose, as possessing in a greater degree the property of rendering the leather impervious to wet. The patentee also finds these greases useful for preparing stuffs of various descriptions, to give them elasticity and imperviousness, and the property of tenacity and durability.

This vegetable grease will, in some instances, be found to answer better by being applied warm to the leather and other materials, as it will in that fused state penetrate better into the substance, and carry with it any small portion of wax or cerine which it may contain, and that with great advantage as regards the desideratum of imperviousness to wet. By redistilling the grease, adiposole oleous liquid is again obtained, and a residuum, a resino-adipose-wax, which may be termed peacerine, and which has the property of furnishing a very fine black polish when slightly spread upon leather, and submitted to severe subbing from a smoothed surface instrument. The patentee also mixes these greases and wax with gutta percha, dissolving the latter in bisulphuret of carbon; he also mixes it with the grease or wax in a fused or warm state.

To this mixture of gutta percha and peacerine, or the greases, he adds cork, turf, waste wool, or cotton, or rags, &c., reduced or pulverised, and while warm he passes the compound through rollers, so as to form it into sheets of the thickness he wishes, or otherwise into tubes, &c.; it thus forms textures which may be applied to numerous useful purposes.

The patentee claims the application of the greases and resino-adipose wax obtained from peat, and denominated peacerine, adiposole, and adipolein, for currying and polishing leather, and also for strengthening it, and rendering it and other materials waterproof, and the various other uses herein described and alluded to.

The third improvement contained in this specification relates to the manufacture of peat, turf, humus, and other vegetable matter, into manure. For this purpose the patentee combines urine, blood, the ammoniacal liquors from gas works, &c., with finely-pulverised peat, turf, &c., together with such other substances as, from the nature of the soil or the constitution of the plant, may be considered useful; the combination of these various ingredients being effected by means of the churn hereinafter mentioned. This manure is to be applied in the usual manner, or the seed to be sown, having been first covered with some substance of an adhesive nature, is coated with the manure, so that each grain is surrounded with the manure suitable for the future development of the plant. Coaldust or ashes, sand, burnt clay in powder, peat ash, shale-ash, coprolites, shells, and other organic and inorganic substances, may also be added, in a pulverised or disintegrated state, with the view of making the soil friable, and rendering it more accessible to air and moisture. The patentee also prepares humic or peat acid, by boiling peat with a solution of caustic potash, and precipitating by means of sulphuric acid; this preparation is added to the other ingredients in the formation of the manure, also coal oil, shale oil, or other strong smelling substances of like nature, to protect the seeds of plants from the ravages of insects. He applies the term "huminate" to the manure so formed, from the fact of its being principally composed of vegetable organic substances which furnish humus, humic acid, &c.

The patentee claims:—

The use of peat, turf, humus, or other decomposed or partially decomposed vegetable matter, to be applied by attaching it to the seed, grain, bulb, or root, &c., either alone or with other matter or ingredients, and reduced to a powdered state for the purpose, and so prepared for the purposes of manuring generally, whether to be used alone or in combination with other fertilising matter or substances as described, and so as to form a manure resembling farm-yard manure in a concentrated and condensed state only; or, the like manure with the addition of other matter and inorganic substances combined, so as to give it the twofold character of an organic and a mineral and mechanical manure at the same time, and otherwise prepared or modified, as shown or alluded to in the foregoing specification.

The fourth part of the patentee's invention consists in improvements and additions to a system of "mixing and digesting churn," patented by him September 7, 1850. The main object of this apparatus is to furnish the means of treating certain substances in a fused state, when requisite, and to allow of the vapours that may be at the same time generated in it either of being carried off for condensation and collection or otherwise, and also of treating matters with a constant supply of vapour, gas, or air, as the case may be; and, again, of treating gases with any ingredient or solution that may be deemed desirable. The axle of this churn is made to remain in a fixed position, in the same way as that of a carriage, and the churn to turn upon it; it is pierced horizontally at both ends to a certain distance, so that the steam, or vapour, or gas, can be forced into the churn at one end of the axle, and carried off through the other end for collection or discharge, &c., after having acted upon the contents of the churn, which is kept turning at a rate necessary to keep the whole contents in violent action. In the case of treating gases, these are, at a sufficient pressure, made to pass through the churn, which is kept in motion, and, after a forced contact with its contents, whether lime in powder or any other matter in a disintegrated state, or liquid solutions, &c., carried away to be dealt with as desired. If the matter treated be of a nature which requires that it should be fused or melted by heat, in order to treat it in a liquefied state, fire is placed under the churn, or the churn may be worked in a sufficiently warm chamber, so that the material may be kept at a necessary degree of heat for its fusion. A piece of tube is fixed at each end of the axle inside the churn, and connected with the hollow part of it in such manner as to remain upright between the two sides of the churn and the ends of the tilting shelves, which are made so as to leave a space for this purpose, as well as to allow liquids to run down freely to the bottom of the churn when still for removal. By means of this churn a more perfect and constant mixture and digestion of various substances, differing in their specific gravities, may be obtained, than by any other practical mode of operation. The churn may be made either of wood, wood lined with metal in its natural state, or coated with a vitreous or earthen glaze, or of any composition capable of resisting the effects of acid, &c., or of glass, or of any other material appropriate to the peculiar nature of the substances and ingredients, the treatment of which the churn may be particularly intended for.

The patentee claims:—

The system of apparatus, as described, for mixing, digesting, bleaching, washing, purifying, and otherwise chemically treating matters, and fluids, and gases, as alluded to in the foregoing specification, and its appliance to various other useful purposes.

Legal Intelligence.

COURT OF COMMON PLEAS.

NOVEMBER 6.

HUTCHINSON *v.* THE SURREY GAS CONSUMERS' COMPANY.

This action was brought by the plaintiff, as engineer to the defendants' company, to recover the amount of his salary, and tried before the Lord Chief Justice, when a verdict was found for the defendants.

Mr. Sergeant BYLES now moved for a new trial on the ground of misdirection, and because the verdict was against evidence.

The company were provisionally registered in November, 1848, and were completely registered in May, 1849, at which time they became incorporated by the force of the statute 7th and 8th Victoria, cap. 110, sec. 25. The plaintiff acted as engineer from the original formation of the company. It was objected that the company were not liable to pay the plaintiff for his services prior to the incorporation of the company, and for his services afterwards they paid £50 into court. The plaintiff was appointed engineer, at a salary of £500 a year, and remained in the service of the company till 1850. His lordship directed the jury that the company, sued as a corporation, was not liable for the plaintiff's services during or before the provisional registration of the company and before its incorporation, and the jury found the £50 paid into court sufficient for his services afterwards. The learned sergeant contended that this ruling was a misdirection, and that the verdict was against the evidence, his salary being £500 a year, and he having served the company a year after it was incorporated.

The COURT thought the verdict ought not to be disturbed.

Rule refused.

Miscellaneous News.

THE GAS MOVEMENT IN ST. MARYLEBONE.

Vestry Meetings.

Oct. 8.

A special meeting of the vestry of St. Marylebone was held this evening at the Court-house, for the purpose of receiving the report of a special committee, appointed as to the acceptance of a tender made on the partof the Equitable Gas Company to light that portion of the district at present lighted by the Chartered Company.

Mr. S. J. Stephens having been appointed to the chair,

Mr. W. E. Grebnwell brought up and read the following report of the committee :— "St. Marylebone, Oct. 8, 1851.

"At the Gas Committee—present, S. J. Stephens, Esq , in the chair, Messrs. George, Nicholay, Poland, Pritchard, King, Simmons, Tarlington, Burden, D'Iffanger, jun., Bousfield, and Hodges.

"Your committee report specially, that they have proceeded to the consideration of the tenders referred to them for lighting the public lamps in a certain district of the parish with gas, viz., a tender from the Chartered Company (who have hitherto supplied a portion of the parish with gas) and one from the Equitable Company (who have mains laid down in part of Oxford-street), and they have been attended by the officers of those companies. A deputation from the Gas Consumers' Protection Committee also waited upon them, to urge the advantages that would accrue by admitting a competing company into the parish.

"The committee had also laid before them a communication from the Chartered Company, dated the 6th of October, being subsequent to the time at which the tenders were advertised to be sent in, but which your committee could not consistently entertain.

"Your committee recommend that the tender made by the Equitable Gas Company be accepted, and that permission be given to that company to lay down their mains in that part of the parish for which they have made application, the work to be performed under the direction and to the satisfaction of your surveyor, and the company specially undertaking to supply, with the four-feet burner, at £3 per annum, a gas equal in quality, as well as in quantity, to that now supplied to the lamps in the same district, and indemnifying the vestry against all costs and charges for repaving, and entering into a contract, at their expense, upon the terms of the present contract with the Chartered Company (subject to such variation as may be occasioned by the terms of their tender and the report of your committee), and to contain such clauses for carrying out the necessary arrangements as your solicitor considers necessary.

"Your committee find that the Equitable Company are supplying gas at 4s. per thousand cubic feet to customers whose rental amounts to £3 per quarter, and that if the winter quarter's consumption amounts to £3, the practice of the company is to make the charge of 4s. for the whole year, although the summer quarter's rental may fall short of £3, and at 4s. 6d. per thousand cubic feet to consumers of less than that amount ; and that they supply the consumers with meters at a small annual rental, if they prefer hiring to purchasing their own; and that the company also lay all new service-pipes, and make any subsequent alteration, free of expense to the public.

"The advantages of competition to the ratepayers in so important a matter as gas, and also finding that the Equitable Company have been a competing company for twenty years, and that they, at the present time, supply six parishes, besides a large proportion of the most important public establishments in London, including many of the principal theatres and club-houses, induce your committee to recommend the vestry for this occa sion to suspend their resolutions of the 22nd day of March last, whereby it was declared, 'That any competing gas company should be admitted into the parish, on giving security to lay down their pipes through the streets, squares, and lanes thereof, in such order and progression as may be directed by the vestry, under a penalty of £5000, to be recovered as liquidated damages; and that a penalty of £20,000 be recoverable as liquidated damages, in the event of amalgamation or any combination to deteriorate the quality or raise the price of gas-lighting.'

(Signed) "S. J. Stephens, Chairman,
"And all others present."

Mr. J. A. Nicholay moved the adoption of the report. He said he congratulated the vestry on the prospect they now had of breaking up the gas monopoly in that parish. A spirit of competition at last appeared to be created amongst the old companies, and no sooner did the Chartered Company, which had lighted a district of Marylebone for twenty-five years, find out that the Equitable Company had tendered at a much lower price than themselves, than down they came, but too late, to the same price. That tender was, however, too late, and the committee felt they could not entertain it, and felt it their duty to recommend the tender of the Equitable Company, which was also characterised by a greater amount of liberality to private consumers, which the committee felt it was the duty of the vestry equally to look to with the parish. (Hear.) As regarded the Imperial Company, it was to be hoped this movement would have its effect, and that the acceptance of the contract of the Equitable Company by the vestry would bring the Imperial Company to equitable terms. They had called on the vestry clerk to write to the Imperial Company, informing them of the terms on which the Equitable Company had agreed to light the parish, to know if they would do so on the same terms, and if they would contract for the future to light the parish for one, two, or three years. The Chartered Company had proved that they could supply gas lower than they did, by putting in a second tender ; but, if they wished to deal fairly, why had they not done so before? Another point where the Equitable was more liberal to consumers was, that they lent their meters at a small annual charge, whilst other companies made a monopoly even of their meters, by compelling consumers to purchase them, which was a great hardship. Some gentlemen said we were much indebted to these great gas companies for coming in and giving them the advantage of gas. He said so too ; and on the same ground they were indebted to the water companies ; but that was no reason why they should put up with a dear as well as a bad article, if they could could get a better. (Hear.) He contended that they had a right to competition in water as well as gas. He thought the vestry were to blame for not having a competition in gas all over the parish at that moment. When the Western Company offered to come in, some few years back, they were so fettered and clogged by the penalties and resolutions of that vestry that they could not do so, and now they wanted them they refused to come. Other parishes had received them with open arms, and Marylebone was the loser. The committee recommended that the penalties for amalgamation should be suspended with regard to the Equitable Company, because they did not apply to an old like a new company, that old company always having been a competing company, and only at present seeking to light a district, and not the whole parish. Had the Equitable Company any desire to amalgamate, it had the power in its hands now. They had superseded other old companies in nearly twenty parishes, and lighted the principal theatres and other public buildings. The representative of that company stated they meant honest competition, and, when they were in a position, would go over the whole parish. He moved the adoption of the report.

Mr. Clement George seconded the resolution. He was anxious on Saturday to have the tender of the Equitable Company acepted at once; but, from what had transpired since, he was glad they did not do so. He felt it his duty in committee, and hoped all public boards who had to do with gas companies would enforce upon them the principle, that they should treat all classes of gas consumers alike, which was more in accordance with the enlightened spirit of the age than the Manchester model of supplying wholesale consumers of gas at a cheaper rate than the smaller ones. The fine of £20,000 for amalgamation might be all very well as applied to a new company coming in to light a great parish like Marylebone, to prevent it being bought up by the old companies, but it did not apply to an old company like the Equitable, which had been twenty-five years a competing company, and which they were unable to buy. Had those penalties been enforced the Equitable Company would not have tendered, and thus the parish would have lost the advantage of the reduction of 11s. each light on the public lights. He agreed that this was the first step to break down the gas monopoly in that parish; and, notwithstanding it was alleged that the Imperial Company would lose £1500 per annum by the public lights if they adopted the terms proposed by the Equitable, he did hope, if they looked into futurity, they would see that, by a fair and proper reduction, both to private and public consumers, they would themselves in the end be more than compensated. (Hear, hear.)

The Chairman read a letter from Mr. Evans, the superintendent of the Chartered Company, stating that, although their contract was only for four feet per hour burners, there were 268 in the Marylebone district supplied with burners consuming gas to the amount of 13s. more per annum than the contract agreed upon by the vestry. This, taking the number of years they had been so burning, amounted to more than £1000. He mentioned the fact to show that the directors of the Chartered Company always desired to act liberally towards the board.

Mr. George begged to remark upon this letter that, although five feet per hour burners might have been put up, the burner did not in all instances regulate the amount of gas consumed per hour. It mainly depended upon the pressure at the works; and the fact was, that the pressure put on at the Chartered Company's works was so weak, that he doubted much whether these five feet per hour burners burnt even four feet of gas per hour. At all events, the Equitable Company were prepared to send their gas through the same burners at £3 per light instead of £3. 11s.

Mr. Scace, the surveyor, in answer to a question from Mr. Hodges, said the five feet per hour burners were put up on account of complaints made as to the lights some few years back, and his representations to the company, but he could not tell how many they had so put up.

Mr. Botting could not see so many advantages from the Equitable Company as had been represented. All that the consumers would save who burnt less than £3 worth of gas per quarter was sixpence per thousand cubic feet. (Hear.) Nine-tenths of the consumers of Marylebone burnt less; and he thought, therefore, when such a statement went forth it would not give very great satisfaction. If there was a difference made at all, it ought to be to the smaller consumers, who could least afford to pay. (Hear.)

Mr. M'Evily would not wish it to go abroad that the change which was made in accepting this tender of the Equitable Company would extend competition in gas all over the parish, although such a thing was most desirable. It ought to be known that it only extended to the small district now lighted by the Chartered Company. A great deal had been said about this Equitable Company being a competing company; but how was it that it was not until they found the ratepayers in earnest in endeavouring to get up a gas consumers' association amongst themselves that any one of the old companies stepped forward and offered competition? (Loud cries of "Hear, hear.") If the people of Oxford-street were to have the advantage of competition in gas, he would contend so ought the ratepayers and gas consumers all over the parish. (Hear, hear.) To call this Equitable Company coming in, merely to take the ground of the Chartered, "competition" was a farce. (Hear.) He looked upon it as a shame, and, although he was not opposed to the report, he was afraid it would rather strengthen the position of the Imperial Company. The Chartered Company were prohibited from trenching upon the Imperial Company's ground by act of Parliament, but it leaked out in committee that the Imperial Company had a heavy bond from the Equitable that they should not compete with them without forfeiting heavy penalties. He, therefore, feared there was great danger that competition in that parish was as far off as ever. He had grave suspicions on the point, and they were not quite removed by the explanations he had heard that evening.

Mr. Nicholay, in reply, said he did not apprehend the evils spoken of by Mr. M'Evily. The representative of the company assured the committee that they honestly meant competition, and that they would, in course of time, be prepared to go over other parts of the parish; the bond alluded to only referring to the purchase of a main of the Imperial Company, which they could get over with but little difficulty.

The report was adopted unanimously, and the vestry separated.

OCT. 25.

A very fully attended meeting of the vestry was this day held—Henry Lewis, Esq., in the chair.

Mr. W. E. GREENWELL, the vestry clerk, laid before the vestry the following important communication from the Imperial Gas Company, relative to the demand made upon them for a reduction in the price at present charged by that company for the public lights in Marylebone :—

"Imperial Gas Light and Coke Company, 33, John-street, Bedford-row, Oct. 24, 1851.

"Sir,—Your letters of the 9th and 16th instant, inquiring, on behalf of the vestry of St. Marylebone, whether the company is prepared to offer terms more advantageous to the parish than those of the present contract, have been this day laid before the court of directors of the Imperial Gas Company, by whom I am instructed to state, in reply, that they have the most earnest desire to meet in all things the wishes of the vestry, so far as they can do so without injustice to their other customers and to their own proprietors.

"It has been the uniform practice of the company to supply their gas at the lowest price at which it could be sold consistently with a fair and reasonable trade profit; and, in exemplification of this, the directors would point to the fact that, within the last ten years, the price of gas has been voluntarily reduced by them from 9s. to 5s. per 1000 cubic feet, or 44 per cent.—the last reduction, from 6s. to 5s., or nearly 17 per cent., so late as the 1st of January last.

"The directors have not been insensible to the fact that, owing to the agitation for cheap gas, some of the metropolitan companies have been induced to reduce their price below that of the Imperial Company; but, when they view the lamentable results which have ensued to the proprietors in many of those companies from so precipitate a reduction, as shown by the market value of their shares, they, as guardians of the legitimate interests of their shareholders, but with every desire to deal with their customers in a liberal spirit, are warned against, rather than encouraged, rashly to adopt so dangerous a precedent.

"It must be obvious that the price at which gas can be sold with profit in a scattered district can bear no sort of analogy to the price at which it can be sold in a more condensed and closely-populated neighbourhood; and thus, if 4s. per 1000 feet be a fair selling price in the city of London, Holborn, Oxford-street, &c., there is no doubt that 5s. is a still cheaper price throughout that part of the parish of St. Marylebone lighted by this company; and here it may be remarked that, whilst the area of that part of the parish which is lighted by the Imperial Gas Company (and in which they have no less than 65 miles of pipes) is double the area of the city of London, the total revenue to the company from private lights, even at 5s. per 1000 feet, is only about one-fourth of that of the City.

"The directors, nevertheless, have long had under consideration the anomaly referred to by the vestry of the consumers in one portion of the parish paying a higher rate for gas than their neighbours, and have been most anxious to do away with this distinction as far as their position will admit; they had, therefore, contemplated the making a further reduction in the price of their gas by meter on the 1st of January next.

"A careful examination of their accounts leads them to hope that the increase of their business will enable them to appropriate such a sum to this object as will give satisfaction to their customers generally, and ensure them a supply of gas at a price at which (notwithstanding the representations which they are aware have been made to the contrary, by parties having their own interests in view,) it could not possibly be afforded in the district supplied by the Imperial Gas Company, were it not for the magnitude of their business.

"The directors are averse to enter into any discussion on the policy any other company may think proper to pursue; but, as the vestry have so pointedly called their attention to the tender of the Equitable Gas Company, they may, perhaps, be allowed to observe, that it may be worth while to sacrifice £200 or £300 on the 270 lights in the district of Oxford-street, &c., to obtain a share of the private lights there, which are certainly ten times more numerous than in the same area, on the average of the district, comprising the 3000 public lamps lighted by this company,

"The directors regret that, in coming to the conclusion to make a reduction in the price of the private lights, they are unable to afford any reduction in the charge for the public lights, which are now supplied at only 3s. per 1000 feet; and they venture to hope that the justice of the policy which has hitherto guided them, and which, so far as they can, they design to pursue, of giving the benefit of the reduction in price, which the extension of their business enables them to make, to the private rather than the public consumer, until the charge to each shall be more nearly assimilated, will be acquiesced in by the vestry, as it is manifest that a disproportionate reduction in the price of public lights could only be made at the expense of the private consumer.

"The vestry are aware that, by a clause in the present contract, the Imperial Gas Company are bound to supply gas, at all times and under all circumstances, at a rate per 1000 cubic feet not exceeding the rate at which the company shall at the time supply gas to the private consumers within the parish of St. Marylebone; and, if they will be good enough to refer to the company's letter of December 8, 1848 (a copy of which is enclosed), they will there find the reasons for such proviso.

"In conclusion, the directors have only to add that, whilst they have been gradually reducing the price of gas to the public, they have at the same time been endeavouring, by every means in their power, and at greatly increased cost, to increase its brilliancy; and they believe that in this respect, as well as in point of purity, their gas may challenge a comparison with any gas supplied in the kingdom.

"I am, sir, your very obedient servant,
(Signed) "ALEX. HENRY, Secretary.
"W. E. Greenwell, Esq., Vestry-clerk, St. Marylebone."

(Copy.)

"Imperial Gas Light and Coke Company, December 8, 1848.

"Sir,—I have this day laid the draft contract before the directors, and am desired to say that, with regard to the endeavours which have recently been made to introduce the mains of a new gas company into a few of the most populous streets and places in the parish of St. Marylebone, the directors do not feel that they would be justified in binding the company to enter into a new contract at the expiration of the proposed one (Christmas, 1851), to light the public lamps at the very inadequate price now contracted for. So long as their mains are the only gas mains in the parish, the Imperial Gas Company are willing to give the parish the benefit of the low price, which they are alone able to afford, from the fact of the whole of their capital in the parish being productive; but if two sets of mains are to be introduced, and a portion of their capital thus rendered unproductive, it is impossible that they can undertake to supply gas on the same terms as at present.

"The court will, therefore, require some modification of the clause for renewing the contract for a further term of three years from Christmas, 1851, limiting its operation to such period as the Imperial Gas Company's pipes shall be the only gas pipes in the district lighted by the company. They are, however, perfectly willing, under any circumstances, to enter into an engagement to supply gas to the public lamps for the further term of three years, at a rate per 1000 cubic feet not exceeding that charged to the parishioners generally during that period. I return the draft contract herewith, and beg your attention to the alterations in the clause referred to. I am, &c., (Signed) "ALEXANDER HENRY.

"C. Flood, Esq., Vestry-clerk, St. Marylebone."

It was moved that these documents be referred to the gas committee.

Mr. GREENWELL also read the following from the Western Gas Company :—

"Western (Cannel) Gas Light Company, 9, Holles-street, Cavendish-square, Oct. 24, 1851.

"TO THE VESTRY OF THE PARISH OF ST. MARYLEBONE.

"My Lords and Gentlemen,—The directors of the Western Gas Company have learned with regret that you have contracted, or are about to contract, with the Equitable Gas Company for the lighting of the street lamps in a *portion* of your parish only, consisting of Oxford-street and a few of the adjacent streets. In Oxford-street this company have repeatedly applied for permission to lay their mains, and, had the directors been aware that you would have received tenders for the partial lighting of the parish, they would have sent in such a tender as no doubt you would have accepted. Notwithstanding, however, that the public lighting has now been lost to this company by an unfortunate misunderstanding, the directors instruct me to renew their offer to lay the company's mains the whole length of Oxford-street, and, if you desire it, they will do it in the remaining streets of the districts above referred to, in order to supply the private consumers with cannel gas; the company at the same time binding themselves to take up the street lighting of such district when called upon, at a charge not higher than the Equitable Company's contract price. These mains (if you will be pleased to grant this application *at once*) the company will undertake to complete before December next, and to connect them with their mains now at the top of Regent-street and other streets abutting upon Oxford-street; and in the spring they would lay a large trunk main from the works along the Bayswater-road to Oxford-street, with the view to an extension over such other parts of the parish as circumstances may permit.

"In requesting that you will not refuse this opportunity of procuring for so large a body of your parishioners the advantages of competition, and a supply of good and cheap gas, I am directed to remind you of the following considerations :—

"That no contract with the Equitable Company (but yesterday avowedly amalgamated with the Chartered Company, to-day professedly opposed to them) will secure any bonâ fide or lasting competition, either in quality or price, nor even the introduction of an additional company into the parish; it appearing that in all but a very small portion of the district in question the Equitable are the company which have for years, not openly, but by a private arrangement with the other companies, been supplying the consumers, and without giving satisfaction.

"That memorials, signed by nearly all the consumers in Oxford-street, have been repeatedly presented to the vestry, requesting that this company might be allowed to supply them with cannel gas; and in all cases where such supply has been available, by means of the company's pipes abutting upon Oxford-street, the consumers have procured our gas.

"That it has been publicly proved, and is now almost universally known and admitted, that 500 feet of the Western cannel gas, costing the consumer 3s., affords more light than 1000 feet of the gas of other companies, costing 5s.

"That the Western Company's gas is by patented processes entirely purified of the ingredients which are found in common gas to be pernicious to health, and the contents of shops and private residences.

"That the company, unlike any others, have bound themselves by heavy penalties to St. James's parish, to maintain the superior illuminating power and purity of their gas, to the satisfaction of a referee, to be appointed by the parish.

"That the Western Company have been the first to introduce pure cannel gas into London, have been the means of reducing the price of gas already, and did not join the recent coalition of the Chartered, London, and Equitable Gas Companies against the interest of the consumers.

"That the certain and probably immediate consequence of the introduction of this company's gas into a part of the parish, and its contrast with the gas of the other companies, will be the improvement of the quality and the reduction in price of gas over the whole parish.

"I have the honour to be, my lords and gentlemen, your very obedient and respectful servant, "S. BARBER, Secretary.

"P.S.—The directors wish me earnestly, but respectfully, to solicit your immediate attention to this application, as, if the company should not be allowed to lay their mains before December, the negotiations that are at present pending between them and other parishes will prevent, in all probability, the completion of any arrangement in future respecting your parish."

Mr. SODEN moved, "That the application of the Western Gas Light Company be at once complied with," which having been seconded,

Mr. GEORGE thought the far better course would be to refer this document also to the gas committee. It was scarcely fair to the Equitable Company, who were now laying down their mains to give to the inhabitants of a large district of the parish competition, and that without the slightest consideration. It was still more unfair to the Imperial Company, with which company the gas committee had every hope of renewing their contract upon most favourable terms, both to the parish and consumers. He thought, therefore, the immediate granting of such an application might have the effect of entirely destroying those fair and amicable arrangements. He moved that the document be referred to the gas committee.

The amendment being seconded,

Mr. M'EVILY called upon the vestry, if they really wanted competition, to allow the Western Company to lay their mains throughout the district now taken by the Equitable Company, as the period was fast arriving when by act of Parliament they would be prevented from opening the streets to lay down pipes. He could not understand how the request of the Western Company could be refused after granting that of the Equitable, that company being in the same category as

the Western. Although the Equitable Company had supplied gas to the consumers of Oxford-street, their existence in the parish was never recognised by the vestry. The Western Company offered them bonâ fide competition, without reserve or the existence of penal bonds held over them. For these reasons, therefore, he (Mr. M'Evily) was an advocate for immediate compliance with the request of the Western Company.

The original resolution, granting the application, was carried.

Nov. 1.

A very numerously-attended meeting of the vestry took place to-day—H. Lewis, Esq., in the chair.

The confirmation of the minute for the admission of the Western Gas Company to lay their mains in Oxford-street, and into that portion of the parish into which the vestry have recently admitted the Western Company, was postponed till twelve o'clock, and, prior to the proceedings being commenced,

The CHAIRMAN called on Mr. Greenwell, the vestry clerk, to read several communications which had been received upon the subject. The first was from the secretary of the Equitable Gas Company, asking the permission of the vestry for an interview for Colonel Henderson, the chairman, Mr. Pratt, and Mr. Holdship, directors of that company, with reference to the application of the Western Company to lay their mains in that portion of the parish so recently contracted for to be lighted by the Equitable Company, and to offer some explanations upon some misrepresentations contained in the Western Company's letter.

The following letter was also read from the secretary of the Western, accompanied by testimonials from the board of trustees of the Belgrave district, and from the paving commissioners of the parish of St. James, Westminster:—

"Western Gas Light Company, 9, Holles-street, Cavendish-
"square, London, Oct. 31, 1851.

"Sir,—In reference to certain statements which, it appears, are being made by this company's opponents, the directors beg to enclose testimonials from the trustees of the Belgrave district, for whom about 800 public lamps are lighted by the company; and from the Paving Commissioners of the parish of St. James, Westminster, for whom about 600 public lamps are lighted by the company.

"These letters it is requested you will have the kindness to read to the vestry to-morrow, when the confirmation of the minute of Saturday last comes under discussion, which seems likely to be the case.

"I am, sir, yours very obediently,
(Signed) "S. BARBER, Secretary.

"W. E. Greenwell, Esq., Vestry Clerk, St. Marylebone."

(Copy.)

"Grosvenor-place District, Office of Trustees,
"May 6, 1850.

"Sir,—I am directed by the board of Friday last to inform you that they have much pleasure in giving you the following testimonial:—

"The trustees consider the gas supplied by the Western Company to be far superior in purity and illuminating power to that supplied by any of the other companies in this district—viz., the London, Imperial, and the Chartered. They have also proofs as to the great economy in private consumption, having tested the same on their premises. They were also highly pleased with the rapid and careful manner in which the mains were laid throughout the district; and the mode of conducting business by the Western Gas Company has given general satisfaction to the trustees.

"I am, sir, your obedient servant,
(Signed) "G. A. WALMISLEY,
"Clerk to the Trustees.

"To S. Barber, Esq., Secretary to the Western Gas Co."

(Copy.)

"St. James, Westminster, 14, Marshall-street,
"Oct. 29, 1851.

"Gentlemen,—I am instructed by the Commissioners for Paving, &c., this parish, to forward you the accompanying copy minute of the board's proceedings at their meeting held this day:—

"'A letter having been read from the secretary to the Western Gas Company, stating that the new service-pipes and fittings had been attached to the parochial street lamps, and the surveyor of pavements having reported that the company had completed such services to the public lights, it is resolved that the sum of £200, as agreed, be paid over to the said company; and further, that this board has great pleasure in expressing its entire satisfaction with the manner in which the works have been performed, as well as with the manifest improvements in the lighting of the street lamps and the economy of the gas to private consumers.'

"I am gentlemen, your very obedient servant,
(Signed) "T. YORK, Clerk.

"The Directors of the Western Gas Company."

After the reading of these letters it was resolved to admit the deputation from the Equitable Company, which consisted of Colonel Henderson, the chairman, together with the two other directors above-named, and the secretary.

Colonel HENDERSON addressed the vestry at considerable length, denying most of the statements put forth in the letter of the Western Gas Company. He expressed his astonishment that the Western Company should regret that they were not aware of the vestry being about to take a contract for a part of the parish, or they were sure they should have sent in a tender which the vestry would have accepted, when only on the 4th of August last they sent in a letter to the vestry, stating that they were incapable of lighting the parish at that time. The gallant colonel proceeded to urge upon the vestry, that, whilst in the district of Marylebone, to light which they had just contracted, there might be a possibility for two companies to pay in competition, it was impossible that it could do so with a third; and, therefore, they submitted to the vestry the injustice, after the sacrifices which the Equitable Company had made, and the advantages which it had given, not only to the parish, but to the private consumers, of allowing a third company to come in and compete with them. He would have been satisfied with the Western puffing itself, had it not resorted to abuse of their company, in stating that the consumers were not satisfied with the lighting of the Equitable. They never had complaints from their consumers. After ridiculing the notion that the Western Company were the only company which could produce the cannel coal gas, he again appealed to the vestry not to be misled by the misstatements which the Western Company had put forward to induce the vestry to admit them in that district, when the Equitable had just taken the contract for the public lights.

In answer to a question from Mr. Soden, Colonel HENDERSON admitted that the Equitable Company charged 4s. per thousand to all consumers to the amount of £12 per year. They charged 4s. 6d. per thousand to all consumers under that amount.

The deputation having withdrawn,

Mr. CLEMENT GEORGE moved the non-confirmation of the minute admitting the Western Company. He denounced the resolution of the vestry at their previous meeting as hasty and injudicious, and said, if it was necessary to refer the tender of the Equitable Company to the consideration of the gas committee, it was equally necessary to refer the tender of the Western Company to that committee, as they would then have had the means of testing the sincerity of that company. He said it was an Imperial dodge, and the result of the vote of last Saturday was to prevent the Imperial Company coming to equitable terms with the committee of vestry, which they were otherwise in a fair way of doing, and which would have saved the parish a thousand a year.

Mr. BOTTING seconded the non-confirmation of the minute, although he could not agree with the course of the Equitable Company in charging 4s. to the rich, and 4s. 6d. to the poor consumers. If the Western really meant honest competition, why did they not come in at the right end of the parish, at Kilburn, instead of coming in at the wrong end, Oxford-street? (Hear.)

Mr. POLAND supported the non-confirmation, and expressed his surprise at the change which had come over the old party in the vestry in respect to the admission of the Western Company without restriction.

Dr. RUSSELL and Mr. NICHOLAY also supported the non-confirmation.

Mr. SODEN supported the confirmation, and denounced the ingratitude of the vestry to the Western Company, through which alone the price of gas in Marylebone had been reduced to its present amount; he charged the opponents of this company with being the friends of monopoly, and stated that, if it did not come in, a projected amalgamation between the Equitable, the Chartered, and London would take place, and monopoly be perpetuated.

Mr. M'EVILY took the same view of the question, and, in reply to the taunt that the old party had changed their mind, gave it a denial. At least in this matter himself and Mr. Soden were consistent, as, instead of their being the opponents of the Western, and the friends of the gas monopoly, it was the idols of the new party—the Lauries and Mr. Joseph Hume. (Hear.)

A discussion ensued of such a length that our limits prevent us giving even a summary, the result being, that on a division there appeared:—

For non-confirmation	29
For confirmation	16
Majority for non-confirmation	—13

Mr. BOTTS then moved that the tender of the Western Company be referred to the gas committee, and the vestry separated.

PARISH MEETING—UPROARIOUS PROCEEDINGS.

Oct. 28.

Our readers are aware of the fact that this journal has laid before the public the proceedings which have taken place at the various public meetings held in the parish of Marylebone, in reference to the supply of that great and important district with gas, and the attempt which has been made to get up what is termed by its projectors and promoters a "Marylebone Gas Consumers' Company." These meetings have been characterised by the most turbulent and tumultuous conduct, not only on the part of the opponents, but on that of the supporters of the new scheme. The latter have recently assumed to themselves, without the authority of any public meeting, or even the sanction of the gas consumers, which they can show as a body, the title of "The Marylebone Gas Consumers' Protection Committee;" and under that title managed to secure from the Board of Guardians the use of the boys' school at the workhouse, and the sanction of the vestry that the poor-rate collectors should attend to prevent the admission of any other than ratepayers, the defeats they have previously sustained being attributed by them to an organised opposition on the part of the old gas companies, the parties attending such public meetings, as they allege, not being ratepayers.

In accordance with these arrangements, "The Marylebone Gas Consumers' Protection Committee" had placarded the parish during the previous week with bills headed "Gas Monopoly," and convening a public meeting of the ratepayers and gas consumers, to be held at the school-room of the workhouse, on Wednesday afternoon, Oct. 28, at two o'clock; and yet, strange to say, whilst these very parties are demanding competition in the article of gas on the one hand, these same individuals, in another placard, headed also "Gas Monopoly," and addressed to the ratepayers and consumers of the Christ Church, Rectory, and St. Mary's districts, thus abuse the vestry, who, by a large majority, decided on the previous Saturday to give the benefit of competition by the admission of two actually existing and competing gas companies:—

"FELLOW RATEPAYERS AND GAS CONSUMERS: Under the specious pretence of encouraging competition in the supply of gas to this important parish, a clique in the district of All Souls has secured to their neighbourhood, and part of those districts which abut on Oxford-street, the exclusive benefit arising from competition, and thereby leaving the entire of Christ Church, and nearly the whole of the Rectory and St. Mary's, to the tender mercies of the Imperial monopolists. On Saturday last the same parties in the vestry passed a resolution to allow the Western Company a similar privilege, viz., A SLICE OF THE BEST PAYING PARTS OF THE PARISH."

The entire body of the poor-rate collectors was placed at the doors of the workhouse yard, to prevent the obtrusion of any other than

ratepayers, and in the course of the proceedings there were, perhaps, from 300 to 400 persons present.

Shortly after two o'clock, at which time but very few persons had assembled, Mr. William Pearse, the well-known champion of the old gas companies, made his appearance, and took his seat quietly by the side of a table on the platform. The moment he was discovered loud yells were raised that he was no ratepayer, and a demand was made upon the police, by a person whose name was stated to be Nice, to remove him, but which, upon the protest against such a proceeding on the part of some respectable ratepayers, the police at this time refused to comply with. The incident, however, caused great confusion.

J. A. Nicholay, Esq., was advertised to take the chair, but it was stated that a letter had been received from him, intimating that, as he had been entrusted with some addresses to present to Kossuth, he would be unable to attend, and in his absence

F. H. Bridgman, Esq. (late churchwarden), was, on the motion of Mr. Belton, seconded by Mr. Shield, unanimously elected to preside.

The Chairman said he had come into that room with the idea of being an attentive listener to the proceedings of the meeting, and therefore the circumstance of his being called on to take the chair was quite accidental on his part. However, as that meeting of his fellow ratepayers had thought proper to elevate him to that position, and if they wanted a person to fill the office who would give a fair hearing to both sides of the question, and who (should there be a show of hands) would be determined to give an honest decision as chairman, he would be that person. (Cheers.) He should allow none but ratepayers to address the meeting, and, so long as they found a chairman acting honestly, the meeting, having elected him, were bound to obey his decision. He would endeavour to do his duty as an honest chairman, and he called upon the meeting to support him in the honest performance of his duty. (Cheers.) He believed there was a letter from Mr. Nicholay, and also one from Sir B. Hall, to read, expressing their inability to attend.

A Voice: Here is Pearse on the platform, who is no ratepayer; turn him out. (Cries of "Turn him out," and uproar.)

Mr. Shield: If that is persisted in, there is another individual who is no ratepayer, (pointing to a tall man with dark moustachios, who was handing some papers up to the table). (Cries of "Turn him out," and "Who is he? What's his name?" &c.)

A Voice: Gough.

The Chairman (to Mr. Belton): Who is Mr. Gough?

Mr. Belton: The secretary of our committee. (Laughter.)

Another Voice: Mr. Gough, late of Gower-street North, St. Pancras, and no ratepayer.

The Chairman: As the parties who have convened this meeting are, in my opinion, entitled to be heard first, I call on Mr. Belton to address the meeting.

Mr. Belton said Mr. Nicholay had kindly promised to take the chair, but his engagements with Kossuth prevented him; and he was happy to find so good a substitute in the person of Mr. Bridgman. (Cheers.) They had already taken a preliminary step, in the formation of an association to put down the shameful coalition and monolopy which had existed amongst the gas compauies in Marylebone for the last 25 years. It was between the Chartered the Equitable, and Imperial; and he had been, with other parties in that parish, trying to break it up for the last 20 years. He now found there was a better feeling. ("No, no," laughter, and "Hear.") He said they had a better feeling now existing in the representative body of that parish. (Cries of "Oh, oh.") Had not the present vestry allowed other companies to lay down their pipes without restrictions? (Hear, hear.) The coalition and the monopoly would not have existed so long as it had done, if that party who had held the power for so many years, but who had now been sent to the right-about, had done their duty. ("Hear, hear," and "Oh.") Would the old party have let the Equitable or the Western Company in without any restriction? (No.) No; they made it a *sine qua non*, that, if they were permitted to lay down a pipe, they should give a bond of £20,000 to lay them all over the parish, or they would not let them come in at all. ("Hear," and cries of "Very proper.") He understood that the Western Company was permitted last Saturday to come in and lay down their pipes in Oxford-street. Was this the case three years ago? ("Hear," and "No.") But what had the vestry done? They allowed the Western Company to come in and compete with the Equitable and the Chartered; but why did they not let them compete with that company which had been robbing us for so many years. (Tremendous uproar, cries of "Apologise," "Shame," "Hear," &c., &c.)

The Chairman called Mr. Belton to order, and informed the meeting that he had requested the speaker to use no stronger language than the subject demanded, and he had promised to do so.

Mr. Belton, in continuation: The gas supplied to Marylebone was the worst gas in London. (Cries of "False, false," "No, no," and confusion.) Instead of being gas of coal, it was a mere watery vapour. (Laughter, cries of "Shut up," and "Hear, hear.") The Chartered Company's gas was twenty or thirty per cent. superior to the Imperial. (Renewed laughter, and cries: "Are you a shareholder in the Chartered?") He was not a gas shareholder in any company. Look at the Equitable Company. They would give their gas to the large consumer at 4s. per thousand, but the poor consumer was to pay 4s. 6d., and this was the plan which the Imperial Company proposed to adopt from the 1st of January next. Was it fair that the small consumer should pay twelve per cent. more than the rich? What he should like to see would be the parish laying down their own pipes, and getting rid of these companies altogether. (Cheers.) They would only want sixty miles of pipes. (Cries of "Only," and laughter.) Perhaps fifty miles would be enough without Oxford-street, for they had already got a surfeit of competition in Oxford-street, and got their gas at 4s. Sixty miles of pipe would cost £30,000, which, at four per cent., at which it could be borrowed, would be £1250 per annum, and if they had a reducing fund to abolish the debt in 20 years, it would be £1500, making a total of £2750, and the parish would then save upwards of £3500 year in the public lights, and they could get their gas put into these pipes at 2s. per thousand feet. ("Oh, oh," and laughter.)

Mr. Shield: Ridiculous. (Groans and uproar.)

Mr. Belton said Mr. Croll actually supplied the gas, and put it into the pipes of the Great Central Company at 1s. 4½d. per thousand feet.

Mr. Pearse: That is not so. (Loud uproar, and cries of "Turn him out.")

Mr. Belton said he quoted from Mr. C. Pearson's evidence, which he thought was as good as that of the partisans of the Imperial Company. (Tremendous uproar.)

The Chairman: You have no right to designate any here as partisans. (Cheers.)

Mr. Belton here, in defiance of his promise to the chairman, went into a violent abuse of the Imperial Company, charging them with packing the meeting with lamplighters, and brought down upon himself the just indignation of the respectable part of the meeting. He moved a resolution—"That this meeting is of opinion that the mode and terms for the supply of gas to the parish of St. Marylebone have been, and still are, oppressive to the ratepayers and gas consumers, and require a total and immediate change."

Mr. Ray seconded the resolution.

Mr. Boyle, of the firm of Gurney, Boyle, and Co., the well-known licensed victuallers in various parts of London, said he was a large gas consumer in Marylebone, taking his gas of the Imperial Company, in that and other parishes, and he had come to that meeting as anxious as any man to get gas at a fair and legitimate price. With this desire he had come there, expecting to have heard something said in favour of the new company they had heard talked of in Marylebone. He expected to have heard statements which would have induced himself and friends to have supported this new scheme; but instead of which he had heard nothing but unkind words and ungenerous imputations cast upon the existing companies. (Hear.) He asked them to reason the matter like sensible men and men of business, and not to be led away by fine figures of speech on cheap gas or anything else. (Hear, hear.) He was one of those who did not like to pay dear for anything. Well, he paid for his gas at the present time 5s. per thousand, and, if he could get it at 4s., he should, he thought, be a fool to refuse it. (Hear, hear.) It was a very wrong notion the public had got hold of to suppose that all the gas companies in London were paying concerns. The contrary was the fact with many. The London Company was in a lamentable state. They could not pay any dividend, and he doubted if they ever would. This being the case with an old-established company, how careful ought they to be as to their connection with a new one. (Hear.) Where he found the difference of opinion so great as it was with regard to this Marylebone Company, he must confess that, if he could see names of high repute and local standing connected with it, it might alter his opinion; but he was afraid of mere adventurers, solicitors, and engineers, who could always be found to draw up plans and specifications showing a most profitable concern upon paper. (Hear, hear.) What the inhabitants and consumers of Marylebone wanted was not the hope, but the reality. (Hear, hear.) He knew the misery it had cost to thousands who had been led to join companies merely upon the representations of the promoters, whilst none but those parties—solicitors and engineers—reaped the benefit. Let them, therefore, be warned, and look to the reality, instead of running a muck, and using abuse against the existing companies. He came there to hear it proved that this "Marylebone Consumers' Company" was really one of the things that will be—that was to give them at a future time gas very pure and very cheap—and he did not say it would not. But what was the modest proposal of this company? (Hear.) Why, that they, the consumers of Marylebone, should bind themselves to a contract for three years, to take their gas at 4s. per 1000 cubic feet; and yet they had a gentleman getting up there that day, and telling them that such gas should only cost and could be supplied at 2s. per thousand. (Cheers.) Now, he would ask them to fancy the ridiculous position of any one binding themselves to a contract for three years for 4s., when they ought, upon the showing of the mover of the resolution, to get it for 2s. (Hear, hear.) It was very evident that they were on a wrong scent, and ought immediately to be on another. (Hear.) He would ask them how many hands would be held up in that meeting to take gas at 4s., when they knew they could get it at 2s. per thousand? (Loud cheers.)

At this stage of the proceedings, Messrs. E. Smith, Steele, and other supporters of the new Gas Consumers' Company on the platform, feeling how fearfully the observations of the speaker were telling against their views, and finding favour with the meeting, set up a cry, with the object of putting Mr. Boyle down, that "he was no ratepayer."

The Chairman: Mr. Boyle, are you a ratepayer or not? (Hear, hear.)

Mr. Boyle: I beg to assure you that I am a very large ratepayer of Marylebone, at 47, New Church-street. (Cheers.) Mr. Kensett, your collector, is here; let him answer the question. (Cheers.)

Mr. Kensett (the collector), on being called on, said: Mr. Boyle is a ratepayer. (Tremendous cheering and laughter at those who got up the cry.)

Mr. Boyle said, if he were at all disposed to allow his feeling, and not the justice of this subject, to interfere, the unfairness of the attempt which had just been made to put him down might dispose him to act in opposition to those who acted so unworthily. (Hear, hear.) It was a bad cause, however, which could only be supported by trickery and clamour. (Cheers and confusion.)

The Chairman: He has been most unfairly and improperly interrupted. Pray go on, sir. (Cheers.)

Mr. Boyle continued: He asked his fellow gas consumers coolly to

look at this question; and he also would quote Mr. Charles Pearson as an authority. That gentleman said, in his evidence on the Great Central Companies Bill, that it was monstrous to suppose that, in localities where the houses which used gas were few and far between, they could expect gas at the same price as the City. (Hear, hear.) This was the opinion of Mr. Charles Pearson, who was held up by the gentlemen on the other side as an authority, and Marylebone was a case in point. ("Hear," and "No, no.") The mover of the resolution had complained of the present gas companies making, as he said, the poor pay more than the rich. He was sure that no one could desire to see that; but it was a commercial principle, however bad it might be, that large consumers of any article always have an advantage. What he (Mr. Boyle) wanted to demonstrate to them was that they were on a wrong scent, and hard words would not put them on a right one. If a prospectus for a new company came out in that parish, with the names of men of character in the locality attached, then there could be no doubt of its success. He would undertake, by himself individually, and by his friends, to raise some thousands of pounds; but they could not be forced to do it by mere words. (Hear, hear.) When gas companies were originally formed, those who had entered into them as speculations, and who had thus become benefactors to the human race, were entitled to a fair return for such capital. They were entitled to a fair and legitimate price for their gas, and he confessed that he felt it was to the interest of the gas companies themselves to reduce their price to the minimum—(Hear, hear)—and why have they not done so? Some companies had not done so, because the directors had not been discreet men. (Hear, hear.) Had the directors of the old City companies been discreet, the Great Central Company would never have been in existence. If this new company was bonâ fide, instead of asking the consumers to take their gas, and bind themselves for three years, before they had got the article to sell, they would lay their pipes and get their works, and then make their offer. The consumers would naturally say, what is your price? and if it were more favourable than the old companies' they would deal with them. The motto which never failed with Englishmen was, "Live and let live;" and, whilst they demanded their gas at a fair price, he believed they were disposed to see that principle carried out, even with regard to gas companies. At all events, he thought, if it were true that they could get gas for 2s., they ought not to bind themselves to pay 4s.

Mr. Belton explained that he meant to place the gas into the pipes at 2s., and not to supply it to the consumers.

Mr. Boyle would be sorry to misrepresent any gentleman. He liked a fair stand-up fight, and he must confess he did not like this three years' binding of the proposed Marylebone Company. (Hear.) He had a great respect for the honourable profession of the law—(Laughter)—and he didn't say there were lawyers ready to lend themselves to the schemes of companies. He did not say there were engineers that would draw very pretty specifications, or that there were other parties who found it very easy to make promises, but who found it difficult to effect the realisation. (Hear, hear.) Mr. Boyle concluded by moving an amendment:—"That this meeting cannot approve of the measures resorted to by the promoters of the new Marylebone Gas Company, in endeavouring to procure contracts from parties for a supply of gas, which it is not yet in their power to give, for a period of three years, but recommend them, if they wish to supply the parish with gas, to put themselves in a condition to supply their article, and then depend upon its quality and price for support." (Confusion.)

The Chairman wished the meeting to understand what was before them. The resolution appeared to him merely a declaratory one, whereas the amendment referred to a particular company, and to subjects not touched upon in the resolution. He thought, therefore, he could hardly be justified in receiving that as an amendment, but it might be put as a substantive resolution hereafter. (Hear, hear.)

Mr. Boyle said he bowed to the decision of the chairman. (Hear, hear.)

Mr. Shield said he rose to propose an amendment. (Tremendous groans and uproar.)

The Chairman said the meeting had promised at the outset to support him in doing justice, and unless they heard Mr. Shield he must leave the chair. (Cheers.) He called upon them for fair play.

Mr. Shield said it appeared that there was some mistake in the way in which the gentleman who had just spoken had put his amendment, and he would first read his. He began to read his amendment, which was expressing no confidence in the promoters of the Marylebone Gas Consumers' Company, but the chairman stopped him, and said the same objection applied to that as to Mr. Boyle's amendment, and he could not receive it.

Mr. Lawley, who said he was a ratepayer, living in South-street, here came forward to address the meeting. (Cries of, "Are you a ratepayer?")

Mr. Pearse: No; he comes from Southwark, over the water.

This exclamation on the part of the unfortunate champion of the old gas companies, who had remained remarkably quiet until this moment, was the signal for a scene of the most ruffianly and disgraceful conduct on the part of the supporters of the new company ever witnessed in a public assembly of Englishmen, and, from the ferocious aspect of some of his assailants, any one witnessing the scene might have supposed that "Lynch law" was about to be carried into effect on the person of the unfortunate Mr. Pearse. He was immediately seized by the collar, by several of the professed *liberals* of the new party in Marylebone, whilst a rush was made to the platform at him from the body of the meeting; the cries of "Police, police," resounded through the building, many persons in the vicinity of the reporters' table questioning the right of the police to be at a meeting held within the walls of the workhouse at all. Five or six policemen made their way to the scene of tumult, which, in consequence of the pressure, was in no small degree increased by the giving way of a portion of the platform. Loud demands were made by those desirous for the removal of Pearse to the chairman to give orders to the police to that effect, though that gentleman, repeatedly declared himself to be a ratepayer; whilst, on the other hand, a large party in the meeting protested against the interference of the police at all, or the chairman giving any such order.

The Chairman refused to take upon himself the responsibility of ordering the removal of Mr. Pearse, on which some of the getters up of the meeting did so, and the unfortunate gentleman was ultimately dragged like a felon out of the meeting into the workhouse yard, amidst the cheers and the hisses of the contending parties, half the meeting following out into the open air.

The proceedings in the school room were resumed, and Mr. Lawley had just commenced his address to the meeting, when Mr. Pearse again made his appearance at an upper door, and rushed into the body of the meeting, followed by a host of his tormentors. He succeeded in reaching the midst of his friends, who surrounded him, and there were the strongest symptoms of a general pugilistic contest, the uproar being so intense that no business could be done.

The Chairman, whose conduct throughout was highly commendable, seeing there was no chance of further business being done, was understood to dissolve the meeting, and quitted the chair. The meeting was, therefore, at this point at an end, the remainder of the proceedings being mere cabal. The press followed the example of the chairman, and quitted the disorderly scene. We are, however, informed that an individual, known to most persons present as Mr. "Chicory" M'Dowell, took possession of the vacant chair, Notwithstanding the uproar, the unfortunate Mr. Pearse contrived to obtain a partial hearing. He pledged himself, as a practical man, to go into the details, and prove to the satisfaction of any intelligent set of men that the public lamps were now supplied at less than 3s. per 1000 cubic feet. He concurred in denouncing the injustice of the great differences in price charged to the two classes of consumers, the private and public, and fully approved of the principles put forward in the two letters from the Imperial Gas Company, which had been read at the last vestry meeting. There was an honesty and tradesmanlike spirit about them which was worthy of imitation by all the other gas companies with which he was connected. The London Gas Company admitted before a committee of the House of Commons that they bought their way into St. Pancras parish by contracting to light the public lamps at £3. 10s. each; and who could find fault with them, because they proposed to sell what they had bought, which they did, in effect, when they proposed to charge £7. 7s. for what they first supplied at £3. 10s. He had to congratulate his little friend Concanen on his improved appearance, and, though he had not taken the shilling he offered him, he had taken his advice, and shaved off his moustache before again making his appearance in public. The uproar and confusion were so excessive that no business could be transacted. The proceedings lasted for upwards of two hours.

GREAT CENTRAL GAS CONSUMERS' COMPANY.

The half-yearly general meeting of the shareholders of this company was held at the London Tavern, Bishopsgate-street, on Tuesday evening, the 28th ult.

Mr. Dakin, chairman of the board of directors presided. On taking the chair he said:—Gentlemen, before we proceed to the business for which we are called together, I wish to take the instructions of the meeting with regard to an application made by a gentleman, named Pearse, to be present. At the last half-yearly meeting he made a similar application, but was refused admission on the ground that he was not a shareholder. It appeared that he had purchased a share, but he had not then placed himself on the register of the company. This share was one belonging originally to a Mr. Higinbotham, but was lost; and, an affidavit having been made of that fact, he attempted on last Friday to place his name on the register, but, the books having been closed, he was not yet on the transfer list. It was now proposed to transfer that large interest to Mr. Pearse. (A laugh.) My attention has been called to the Journal of Gas Lighting, of Oct. 10, in which Mr. Pearse is made to say—"I am a member of the Great Central Gas Consumers' Company, and I here pronounce it one of the greatest frauds ever perpetrated. It was founded by deception, and maintained by deception and falsehood." Some six months ago he addressed a letter to me, in which he said he wished to ask me some seventeen questions at the public meeting; and, because he was not admitted, he published this letter as an advertisement in a morning paper, and thereby incurred an expense much larger than his interest in this company. It is not too much to presume, therefore, that he has been moved by other parties for other purposes. I wish to know from you now whether he is to be admitted or not. (Loud cries of "No, no!")

Mr. Rowe: Who are the parties called together at this meeting? I presume they are the members of the Great Central Gas Company, and that no other persons have a right to be present. I therefore move that no one who has no interest in the company be permitted to attend this meeting.

A Shareholder having seconded the motion, it was put to the meeting, and carried unanimously.

The Chairman then rose, and said:—Gentlemen, the directors have great pleasure in meeting the shareholders at the appointed time, to render an account of our stewardship; and I can assure you that, notwithstanding the strong language I have read to you, the directors never met the shareholders with greater pleasure or under brighter prospects of success in the well-being of the company. Our mains throughout the City were, at the end of last week, completely finished. To-morrow will be completed the connection with the new main from the east end of Leadenhall-street to the west end of Newgate-street, and then we shall have the whole of the mains perfected without the slightest accident, and there will be no necessity for troubling the City again by opening the streets. We have now mains capable of distributing 800,000,000 cubic feet of gas throughout the City, and I understand that the feelings of the citizens at

large are warmly manifested in favour of the company. On this subject I may be permitted to read a short extract from the *Times* newspaper, which fairly embodies the feelings of the citizens at large. It is a pleasure to me to have this testimony in our favour, as I have had already blame and censure cast upon me by that journal. But, as we have taken the dark side, we may as well take the sunny side also:—"Few things," said the *Times*, "show more forcibly the effect of free and unrestrained competition than the reduction which has recently been made in the price of gas by all the great metropolitan gas companies. But a short time since the general price at which gas was supplied throughout London was 9s. per 1000 cubic feet; at this moment it is just one half, or 4s. 6d. per 1000 feet—a rate which enables every householder to obtain artificial light at very considerably less cost than tallow candles, and, of course, when compared with other kinds of candles, as wax or sterine, the saving in favour of gas is greater. This reduction has been obtained for the public chiefly in consequence of the proceedings of a new gas company, which obtained an act on the condition of supplying gas at 4s. per 1000 feet, and which is now carrying out those conditions in a bonâ fide manner." That is a correct verdict on our proceedings. We are now supplying large quantities of gas on those conditions. The act of Parliament contains all those conditions which we in the outset professed to adhere to with respect to the supply of gas, and to-morrow I shall have the pleasure of calling the attention of the Court of Common Council to that portion of their duty thrown upon them by our act, as guardians of the public interest, with respect to the appointment of auditors, persons to test the purity of the gas, and inspectors of meters. I shall then move the following resolution:—"That this Court do, in the month of December next, and yearly, appoint fit persons to examine and audit the accounts of the company for the preceding year, in pursuance of the 14th and 15th Vic. c. 49; and that this Court also appoint a practical chemist or competent person to test the gas, agreeably to the 39th section of the said act; and that the Court also appoint an inspector to examine the meters and stamp the same, agreeably to the 40th section of the act." I believe your directors are carrying out all the public purposes this company was designed to effect. With regard to the private affairs, which are more immediately interesting to this meeting, the directors have caused a report to be drawn up, which our solicitor, Mr. Hardwicke, will read to the meeting. Before that is read, the secretary will read the notice convening the meeting.

The Secretary having read the advertisement,

Mr. Larby inquired what would be the consequence if the Court of Common Council refused to appoint the several officers referred to by the chairman?

The Chairman said he believed there would be no objection on the part of the Common Council to make those appointments.

Mr. Hardwicke, the solicitor, then read the report, of which the following is a copy:—

"TO THE SHAREHOLDERS OF THE GREAT CENTRAL GAS COMPANY.

"Gentlemen,—The period has arrived when your directors have the pleasure of again meeting you, and reporting the progress of the affairs of the company since we last assembled, and its present position.

"Fortunately, our statement will not involve the more stirring and exciting topics which, during the period of struggle for establishment, were of necessity brought before you, but will embrace only the peaceful and more ordinary matter which recites the quiet and successful pursuit of our business.

"The details which we shall have the satisfaction of bringing before your notice will show that our company is pursuing a steady course of improvement, adding weekly to its number of customers, and realising completely all those results which the calculations of our engineer and the principles of the promoters led you to expect.

"It will be unnecessary to recite the proceedings of the special meetings which were convened by the shareholders and consumers, to consider the circumstances in which we were placed on the eve of going to Parliament for our bill. These finally resulted in an agreement that the City companies were to withdraw all opposition to the passing of our bill, and that, on the principles carefully considered by all parties concerned, the City of London Gaslight and Coke Company was to be amalgamated with our own by an act of Parliament, to be applied for in the ensuing session. We are now proceeding under the regulations of our own act then obtained, and as directed by the arbitrators under the deed. Three directors from each board are appointed to carry into effect the provisions of the deed, by giving in the ensuing month the requisite notices for the act of amalgamation, and by preparing the bill, to be lodged in the month of December, which is to contain all the provisions for the security of the public contained in the bill now already passed. Until this is passed by the Legislature, each company is carrying on its own business, without canvassing each other's customers, or rivalry of any kind.

"The auditors' report will place before you the exact state of the capital account up to the period of audit. The position of this account, up to 30th of September, is as follows:—

RECEIPTS.

Total amount of capital received	£147,850	2	0
Amounts of mortgage	25,000	0	0
	£172,850	2	0

PAYMENTS.

Parliamentary expenses	£ 28,874	9	4
Contractors	102,726	5	0
Land, furniture, meters, &c.	26,893	8	11
On account of unfinished works at Bow, and bad materials by Rigby	2,012	8	11
Deposit, Whitechapel, &c.	1,650	0	0
On account of retort settings and foundations of other works	3,060	1	3
Ditto, ditto, works in progress	900	0	0
Ditto, ditto, engineering	500	0	0
Cash, rental account	1,895	3	4
Balance of cash	4,333	13	3
	£172,850	2	0

"In the report presented to the shareholders in April last, the amount of capital expended in cash payments was stated at £157,663. 15s. 6d., from which was to be deducted an amount expended on unfinished extension works, including stock of pipes, tanks partly finished, services and meters, extra land at Bow, amounting altogether to £18,900, leaving a balance of £138,763. 15s. 6d., as expended on works equal to the manufacture and distribution of 300,000,000 cubic feet of gas. The large claim made by Messrs. Rigby, amounting to £32,835, we were advised was a larger sum than was due to those gentlemen, and the question was referred by mutual consent to Mr. Raikes Currie, M.P., Mr. Locke, M.P., and Mr. Phillips, who struck off the amount claimed the sum of £8181, leaving a balance of £24,654, which was paid to the contractors in full of all demands, and in satisfaction of their claim to execute the further works of this company, by which a considerable saving will be effected, as more favourable arrangements in subsequent contracts have been made.

"The rapid increase of the consumption of gas caused by the reduction in price has rendered it necessary, before the winter consumption commences, largely to increase the producing, storing, and distributing power of the works.

"On applying to our future ally, the City Gas Company, with the view of ascertaining if they had surplus power which might be made available so as to prevent the unnecessary outlay of capital, we were both surprised and gratified by the intimation given that their works were fully occupied, and that, notwithstanding the large consumption we are supplying, they were manufacturing about the same quantity as they did before our operations commenced. Your directors at once, on receiving this information, took steps to obtain tenders for the extension of the works, so as to meet the probable demand, and we have given orders, which are in progress of execution, for additional works, which will raise the manufacturing power to be equal to the producing of 420,000,000, the storing capacity to be equal to 500,000,000, and by the completion of the mains in the City, which is now accomplished, and an additional main from Bow, the distributive power to 800,000,000. These, when completed, will form an expenditure of £200,806, and the manufacturing and storing power may be brought up to the distributive power, viz., 800,000,000, by an after outlay of £50,000, if the demand should call for it; making a total of £251,506, which is about the rate of the original estimate, which was for the manufacture of 736,000,000 instead of 800,000,000.

"Your directors have the power under their bill to issue additional shares to the extent of £50,000, and to borrow on bond or debenture £66,000; but, inasmuch as the arrangement of the shares under the deed with the City Gas Company does not make it desirable to issue additional shares, your directors have it in contemplation to summon a special meeting, as directed by the act, for the consideration of this question, when all the details will be submitted to your judgment.

"With respect to the position of the company as to revenue and the working expenses, your directors have to submit the following statements:—In April last, when we met, the number of lights supplied by this company was calculated at 39,850; our present number is now calculated at 46,456, showing an increase of 6306 lights, or nearly 20 per cent., in addition to the public lights, for which, as you are aware, we obtained the contract.

"The rental for the half year ending the 29th of September last, being the two light summer quarters, was £13,203. 15s. 3d.; and the yearly consumption calculated at this, without the progressive increase which we are obtaining, will be at the rate of £53,000 per annum.

"The amount of revenue and details of expenditure for the three last quarters are given in the subjoined abstract:—

The total receipts for gas since the 4th of December last, up to the 30th of September, is	£26,388	4	7
Total payments for wages and salaries, general charges, including office charges, advertising, and miscellaneous charges, stationery, books, &c., rates and taxes	3,365	17	11
Paid for gas to 29th of September, 1851	11,809	13	9
Dividends on calls to 21st of March, 1851	4,337	10	6
	£19,513	2	2
Leaving the net amount available for dividend	6,875	2	5
	£26,388	4	7

"This result enables the directors to recommend to the shareholders that a dividend be declared of 5 per cent. per annum for the half year, which will amount to £3900, and likewise a further dividend of 2½ per cent. on all calls from the respective dates of payment, up to the 21st of March last, and which will amount to £2176, making together £6076, leaving a balance of £799. 3s. 2d. The dividends to be payable on the 25th of January next. If this recommendation is adopted by the meeting, a dividend of 7½ per cent. up to March, 1851, will be paid, and of 5 per cent. to September, out of the profits of the first winter quarter (which was, owing to the delay in the execution of the works, comparatively an unproductive one), and of the two summer quarters just past. And your directors fully anticipate that the working of the two heavy quarters just commenced, the rental of which they estimate at about £40,000, will enable them at the next half yearly meeting to pay out of profits the remaining 2½ per cent. up to March, the additional 5 per cent. up to September, and the 10 per cent. dividend for the current half year, free of income-tax; thus realising, as far as dividend is concerned, the results stated by the promoters of your company as likely to spring from the principles laid down, and the practice which you have enabled your directors so successfully to carry out; and, whilst forming a profitable investment for those who have advanced their capital, we have reason to rejoice that the future gas administration of the City is placed upon such a basis by act of Parliament, that, while the fair profit of the shareholder is provided for, the evils which spring from uncontrolled monopoly are effectually prevented."

The reading of the report was followed by loud cheers.

Mr. C. Pearson, in moving that the report be adopted, said the applause that followed the reading of the report, was the best motion that could be made for its reception and approval. However, as it was the custom at such meetings for some shareholder to move the adoption of the report, he must say that a report more satisfactory it was impossible for any board of directors to produce. He might say this with frankness, for he could assure the meeting that the reading of it which had taken place was the first account he had had of the perfect success of the company during the last half year. He had not been able to attend the meetings of the board, of which he was only an honorary member, but, as the directors had proceeded in such a business and systematic manner, he believed his assistance might now be fairly dispensed with. (No, no.) There were always uses for men of an active spirit, and he had transferred his

services to another public department, where he was strenuously engaged in promoting another object, which he hoped would be as successful as this company had been. Again he must repeat that a more triumphant report had never been produced to any body of shareholders. Just let them for a moment contemplate what they had been told. They had been told that, although the company had been only in active existence—exercising its distributive and supplying powers—from the 29th of September, 1850, and that the first quarter was almost spent in getting ready, in consequence of the treachery with which they had been assailed, they were now enabled to pay 7¼ per cent. Such was the treachery employed with respect to the laying down of their pipes, that, instead of their pipes being mains for supplying gas, they were cullenders for the escape of gas. (Hear, hear). It was a positive fact, that, out of every 100 cubic feet of gas put into those pipes, 99 escaped in the course of several hours. The gas which found its way to the consumer was not one per cent. of the quantity sent from the works. This was owing to the fact that certain persons had been bribed to betray them. The mouths of the pipes were left open, and neither lead nor tow used to prevent the escape of gas. The pipes were found so leaky and defective, that many of the best friends of the company had their doubts and fears that the company would not be able to continue the supply. They all knew that with tradesmen, and particularly the large consumers, it would be a matter of fearful consequence if there should be a stoppage in the supply. The directors had received many communications from parties who were willing to take the gas, but prudential considerations made them hesitate, lest, in the event of the supply being defective, the old companies might refuse to serve them again on the same terms as previously. Notwithstanding all these untoward circumstances, the Great Central was now enabled to pay 7½ per cent. on the subscribed capital, from the first moment one shilling was paid by any of the shareholders; and when the company was eighteen months old the directors would be able to pay 10 per cent. from the very commencement. (Cheers.) This was a cheering result, particularly when it was recollected that they had been told that to supply gas below 6s. would involve in positive ruin every person engaged in the company. He would not detain the meeting further than to congratulate them on the zeal, enterprise, and ability displayed by the directors and their talented and industrious engineer, Mr. Croll. (Cheers.)

Mr. Hall seconded the motion.

Mr. Rowe wished to know if their business during the last six months was such as to warrant their expectations of receiving 10 per cent. at so early a period. If so, as a man of business, he would not like to leave the calf in the cow's belly; but he feared their expectations were over-sanguine. He did not make the observation in a spirit of discord, but from a desire that the company would maintain the high character which it always possessed.

The Chairman said his brother-in-law, who had just spoken, had called on him before to learn the matter of the report. Had he received the information he then sought he would not have made the observations that then fell from him. If he had listened attentively to the report he would have found, from the accounts, which were made up to the end of September, that the earnings of the company to that period alone were made available, and that they were sufficient to pay a dividend of 5 per cent. for the last half year, and a further dividend of 2½ per cent. on all calls, from the respective dates of payment up to the 21st of March last, clear of income tax. To pay the back dividends it required something like £13,000. And at the end of April next, if their estimates were correct—and he thought they were—they had no doubt whatever of being able, at the the next half-yearly meeting, to make up a dividend of 10 per cent. from the commencement. (Cheers.) If that were done in the green tree, what would be done in the dry? (Cheers.) He believed there never was a company more sound or flourishing in condition than this company. It was quite in a way to carry out all that it ever promised either to the public or tbe shareholders.

The report was then adopted.

Mr. Pearson then moved, "That the cordial thanks of the meeting be given to the chairman, deputy chairman, and directors, for their zealous discharge of their duties during the last half year."

Mr. Watson seconded the motion, and it was carried unanimously.

The Chairman, in responding to the compliment, said they had been accustomed to estimate the yearly consumption of gas in London at 450,000,000, but, from the statistics of the City of London Company and their own, he knew that the present consumption of the city of London was about 750,000,000. (Hear, hear.) An increase of that kind was mainly owing to the principles propounded by their friend Pearson, and so successfully carried out by Mr. Croll in the engineering department. This must be gratifying to them all, as it would contribute much towards the luxury of the higher classes, the convenience of the struggling artisan and shopkeeper, and the cheerfulness of the poor. (Cheers.)

Mr. Pearson said there were two objects that recommended themselves to the generous mind; first, to please your friends, and next, to disappoint your enemies. They had pleased their friends by what had taken place that day, and he thought that the publication of their resolutions in the daily papers would do much towards disappointing their enemies. He moved, therefore, that the resolutions be published in the morning papers.

The motion, having been seconded, was agreed to.

The thanks of the meeting were then accorded to Mr. Pearson and Mr. Croll for their services, and the proceedings terminated.

The Great Exhibition and the North of England.—"This district has great reason to be proud of the numerous prizes awarded to its various exhibitors in the Great Exhibition of the Works of Industry of All Nations. There has been a larger share, we understand, awarded to them (in proportion to their number) than has fallen to the lot of any other locality. It has also been pointed out to us, as a matter worthy of notice, that the prize obtained by Messrs. Joseph Cowen and Co., for 'gas retorts and other objects in fire clay,' is the only prize awarded for such articles, although there were from 18 to 20 British and foreign competitors exhibiting the like goods. Her Majesty's commissioners, to mark their appreciation of their merit, have solicited (and obtained) leave to preserve the articles exhibited by Messrs. Cowen and Co. as 'national records.' There was a prize awarded to a Belgian for a clay retort alone, but this retort was made by a process which Messrs. Cowen and Co. patented some years ago. A few years ago a right was claimed by the parties in Belgium to prevent an English company in that country from making this description of clay retorts; but, the question being tried in a Belgian court of law, the party prosecuting was defeated, on the English company producing Messrs. Cowen and Co.'s patent, and showing that it was of an earlier date than the pretensions of the claimant. The manufacture of clay retorts, which has lately become a new feature with many in the same business, has for several years, we believe, engaged the special attention of Messrs. Cowen and Co., whose works rank among the oldest and most extensive of the kingdom. The now almost universal adoption of gas lighting on the Continent, as well as at home, renders it of the first consequence that the production of so important an article as the retorts should be preserved by this country; and this desideratum, we trust, the success of our neighbours at the Exhibition has accomplished."—*Gateshead Observer.*

Improvements in the Manufacture of Gas.—The competition which has of late years sprung up in the supply of the important article of gas to the inhabitants of the large towns of the United Kingdom has not existed long without the production of one of its legitimate effects. It has drawn the attention of parties skilled in the chemistry of gas manufacture, and careful observers of the circumstances under which the best results are obtained, to the study of improved methods of treating the various substances capable of being used in the production of gas; and the first fruits are visible in the process lately patented by Messrs. Barlow and Gore (an abstract of whose specifications will be found in another column), which, in the opinion of some of our most experienced gas engineers, is destined to produce a speedy revolution in the manufacture of gas, and materially to diminish the cost of its production. The processes are based—1. Upon an improved method of rendering luminous the gases resulting from the perfect decomposition of water or steam; and—2. Upon the conservative influence which hydrogen exercises in protecting the matter upon which the illuminating power of gas depends from decomposition by heat. The first has been attempted by Donovan, Manby, White, Webster, and others, with dubious and disputed success. Their failures are all traceable to the same sources—first, to the impossibility of insuring the complete decomposition of the water or steam by any of the means employed by them, and to the consequent production of a large quantity of vapour, exercising a fearfully destructive influence over the carbonaceous matter undergoing decomposition for the purpose of rendering the water gases luminous; and, secondly, to the presence in the water gases of from 10 to 15 per cent. of carbonic acid, the injurious effects of which upon the flame need not be here further alluded to, and the expenses of abstracting which by any of the ordinary methods are so considerable, as materially to augment the cost of manufacture, besides diminishing the volume of saleable gas. The present patentees propose to obviate these difficulties by first *condensing* the water gases, so as to deprive them of all excess of vapour, and then to pass them through a heated retort, containing carbonaceous matter, by which the whole of the carbonic acid gas will be converted into twice its bulk of carbonic oxide gas, and the pure hydrogen and carbonic oxide gases in equal volumes, free from carbonic acid, are afterwards admitted in regulated quantities into retorts where carbonaceous matter is undergoing distillation or decomposition, and by which they are rendered highly luminous. The conservative effect of hydrogen upon olefiant gas has not, we believe, hitherto been noticed by chemists. It may, however, be demonstrated by the following very simple experiment:—If olefiant gas be passed through a red hot tube, the carbon will be deposited, and the gas be thereby converted into light carburetted hydrogen, a gas of very low illuminating power. If, however, hydrogen be added to the olefiant gas, the same process may be repeated without causing any deposition of carbon, and with only a diminution of illuminating power in the mixed gases, due to the increased volume of the non-illuminating gas—hydrogen. The practical effect of this property, when applied to gas-making, is to reduce the quantity of condensible products, such as tar, &c., and entirely to prevent the deposit of carbon on the interior surfaces of gas retorts. The importance of these discoveries will be readily understood, when we state that the experience of the patentees leads them to the conclusion that upwards of 50 per cent. may be added to the volume of gas yielded by all descriptions of materials ordinarily used for that purpose, without any diminution of the illuminating power, so that 15,000 cubic feet will be the probable future produce from one ton of Newcastle coal, and 75,000 cubic feet of London gas from the same quantity of Boghead cannel, the ashes of which are further stated to be the best material known for the manufacture of alum, the residue after the abstraction of the alumina being also valuable for the manufacture of pottery, porcelain, and glass, and as a dentifrice, a polishing powder, and decolorant. Truly we live in an age of invention and wonders. We may add that the Chartered Gas Company of London, the patriarch of gas companies, have agreed with the patentees for licences to use the processes at all their works.—*Mining Journal.*

The Late Competition at Copenhagen.—We are requested by Messrs. English, Hansen, and Co., to correct an error in the official announcement of the names of the successful candidates, in which a M. Sörensen is stated to have obtained, conjointly with them, one of the prizes awarded for the best plans of gas works. It should have been Mr. C. Walker.

Share List.

THE PRICES QUOTED ARE THOSE AT WHICH THE LAST SALES HAVE BEEN MADE.

The Companies whose names are printed in italic type are incorporated by Act of Parliament.

Number of Shares issued.	Amount per Share	Name of Company.	Amount paid up per Share	Dividend per Cent. per Ann.	Price.
	£	**ENGLAND.**	£ s. d	£ s. d	£ s. d
		Aberdare			
		Aberystwith			
		Abingdon			
		Accrington £7000		5 0 0	
		Albrighton			
		Alcester			
		Alford, Lincolnsh.			
		Alfreton			
		Alnwick			
		Alston Moor			
250	10	Alton	10 0 0	5 0 0	10 0 0
800	5	Altrincham	5 0 0	4 0 0	
		Amlwch			
160	10	Ampthill	10 0 0	5 0 0	10 0 0
350	10	Andover	10 0 0	6 0 0	11 0 0
		Appleby			
		Arundel			
		Ashbourn, Derby			
		Ashburton			
		Ashby-de-la-Zouch			
		Ashford, Kent			
1600	25	*Ashton-under-Lyne*	25 0 0	10 0 0	52 0 0
		Atherstone			
		Axminster			
225	20	Aylesbury	20 0 0	5 0 0	21 0 0
		Aylsham, Norfolk			
		Bacup, Yorkshire			
		Bakewell			
		Baldock			
140	25	Banbury	25 0 0	10 0 0	50 0 0
		Bangor			
500	5	Barking, Essex	4 10 0	5 11 0	5 0 0
250	10	Barnard Castle	10 0 0	5 10 0	10 15 0
		Barnet			
		Barnsley £6000		7 10 0	
100	20	Barnstaple	20 0 0	7 10 0	25 0 0
		Barton			
120	25	Basingstoke	25 0 0	8 0 0	28 0 0
2400	20	*Bath*	16 0 0	6 0 0	25 to 30
		Battle £2000		6 0 0	
56	26½	Bawtry	26 10 0	5 0 0	25 0 0
		Beaumaris			
		Beccles, Bungay, and Lowestoft			
		Bedford			
		Bedworth			
		Belford			
		Bedale, Yorkshire			
		Belper			
		Beminster			
		Berkhempstead			
700	5½	Berwick-on-Tweed	5 10 0	6 8 0	5 15 0
		Beverley			
		Bewdley			
280	10	Bideford	10 0 0	6 0 0	10 10 0
		Biggleswade			
160	10	Bicester	10 0 0	5 0 0	10 0 0
		Bilston £15,100		8 0 0	
		Billericay			
		Bingley £7400		4 0 0	
		Birkenhead £70,000	35 0 0	3 0 0	35 to 37
2400	50	*Birmingham and Staffordshire*	50 0 0	10 0 0	93 to 94
	25	*Ditto*, new shares	7 10 0	10 0 0	12 0 0
928	75	*Birmingham*	75 0 0	10 0 0	148 0 0
		Bishop's Auckland			
		Bishop's Stortford			
		Blackburn £30,000		10 0 0	
		Blandford			
		Blythe			
		Bodmin			
		Bognor			
		Bolton £38,582		9 19 5	
		Boroughbridge			
		Boston £8000		10 0 0	
200	10	Bourn	10 0 0	5 0 0	
		Brackley			
		Bradford, Wilts.			
		Bradford, Yorksh. £45,000		9 10 0	
		Brampton, Cumb.			
		Brandon, Suffolk			
		Brecon			
		Bridge-end, Glam.			
		Brierly Hill			
2250	20	*Brighton*	20 0 0	5 0 0	14 to 15
1125	20	,, new shares	16 0 0	5 0 0	
		Brighton and Hove £50,276			
4250	20	*Bristol*	20 0 0	9 0 0	37 0 0
1725	25	*Bristol and Clifton*	25 0 0	6 0 0	25 0 0
		Brixham			
		Braintree			
750	50	*Brentford*	50 0 0	6 0 0	44 to 46
800	25	,, new shares	11 0 0	6 0 0	11 0 0
		Brentwood			
		Bridgwater £6000		5 0 0	
400	10	Bridlington	10 0 0	5 0 0	10 0 0
		Bridport			
		Brigg			
		Broadstairs			
100	50	Bromley, Kent	50 0 0	6 0 0	52 10 0
		Bromsgrove			
		Broughton			
120	10	Bruton	10 0 0	4 0 0	8 0 0
100	25	Buckingham	25 0 0	5 0 0	25 0 0
		Bungay (see Becls.)			
		Burford			
		Burnley £19,946		4 10 2	
		Bursalem			
		Burton-on-Trent			
		Bury, Lanc. £6570			
		Bury St. Edmund's		5 0 0	
		Buxton			
		Callington			
		Calne, Wilts			
		Camborne			
		Cambridge £34,560		9 0 0	
240	50	*Canterbury*	50 0 0	6 0 0	
240	25	*Ditto*, second issue	25 0 0	6 0 0	57 to 58
		Cardiff £12,000		7 10 0	28 to 29
		Carmarthen			
		Castleford			
		Chapel on the Frith			
		Chard			
		Chatham (see Roch.			
		Chatteris			
		Cheadle			
		Chelmsford			
		Cheltenham £18,732		8 10 0	
		Chepstow			
		Chertsey			
230	10	Chesham, Bucks	10 0 0		
		Chester			
		Chester-le-Street			
		Chesterfield £13,123		4 17 6	
240	25	Chichester	25 0 0	6 0 0	30 0 0
		Chippenham			
		Chipping Norton			
		Chirk			
		Chorley			
		Chudleigh			
		Cirencester			
		Clifton (Bristol and			
		Cleckheaton, York.			
		Clitheroe			
		Cockermouth			
		Colchester			
		Collumpton			
		Colne, Lancashire			
		Coleford, Gloucest.			
		Coggeshall			
		Congleton £5000		5 0 0	
		Cookstown			
		Cowbridge			
		Corsham			
800	25	*Coventry*	25 0 0	6 0 0	24 to 25
		Cowes			
		Crewkerne			
		Croydon ... £20,000		5 0 0	
		Cranbrook ... £1900		5 0 0	
		Crayford			
		Crediton			
		Crewe, Cheshire			
		Cricklade			
		Darlaston			
		Darlington			
250	20	Dartford	20 0 0	7 10 0	27 0 0
		Dartmouth			
125	20	Daventry	20 0 0	6 0 0	24 8 0
		Dawley, Shrop.			
		Dawlish			
		Dedington			
500	6	Denbigh	6 0 0	5 0 0	6 0 0
820	10	Deptford	10 0 0	5 0 0	4 10 0
325	50	*Derby*	50 0 0	10 0 0	
90	20	Dereham (East)	20 0 0	4 10 0	
1000	5	*Dewsbury*	5 0 0	10 0 0	8 12 6
		Devizes			
4000	5	*Devonport*	5 0 0	6 0 0	6 5 0
		Doncaster			
280	25	Dorchester	25 0 0	5 0 0	30 0 0
120	25	Dorking	20 10 0	5 0 0	21 10 0
		Douglas, Isle of M.			
209	56½	*Dover*	56 10 0	4 15 4	55 0 0
		Downham			
		Driffield			
		Droitwich			
600	20	*Dudley*	20 0 0	4 0 0	15 to 16
		Droylsden			
		Dunmow			
		Dunstable			
		Durham			
276	9	Dursley, Gloster	9 0 0	5 10 0	8 0 0
		Eastbourne			
		East Grinstead			
		Elland			
		Ellesmere			
		Enfield			
300	19	Epsom and Ewell	19 0 0		
		Evesham			
		Exeter £40,000		10 0 0	
		Exmouth			
		Eye, Suffolk			
64	25	Fakenham	25 0 0	5 0 0	25 0 0
		Falmouth			
		Fareham			
120	25	Farnham	25 0 0	10 0 0	42 0 0
		Farringdon			
		Faversham			
		Ferrybridge			
		Fleetwood			
		Folkestone			
		Fowey			
240	5	Framlingham	5 0 0	5 0 0	5 0 0
		Frome			
		Garstang			
		Gillingham, Dorset			
		Glastonbury			
		Glossop ... £10,000		9 0 0	
1000	25	*Gloucester*	25 0 0	7 10 0	28 0 0
		Gomersal			
		Godalming			
		Gosport			
		Grantham			
20		Gravesend	20 0 0	5 0 0	21 0 0
1000	10	*Great Grimsby*	8 0 0	8 0 0	10½ to 11
1000	25	Guildford	25 0 0	4 0 0	20 0 0
		Guisborough			
		Hadleigh			
		Hales Owen			
300	6	Halesworth	6 0 0	7 10 0	5 10 0
		Halifax £15,000		10 0 0	
		Halstead			
		Hampton Court			
		Harrogate £10,000		5 0 0	
		Hartlepool £15,137		7 10 0	
		Haslingden, Lansh.			
330	50	Hastings and St. L.	50 0 0	6 0 0	60 0 0
		Haverfordwest			
		Haverhill			
		Haworth, Yorks.			
		Hayle			
		Helstone			
		Hemel Hempstead			
300	10	Henley-on-Thams.	10 0 0		
		Hereford £5300		4 0 0	
		Herne Bay			
270	10	Hexham	10 0 0	7 0 0	12 0 0
		Heywood £10,000		5 0 0	
		Highworth (Wilts)			
230	10	Hinckley	10 0 0	5 0 0	7 0 0
		Hindley, Lancash.			
		Hitchen			
		Hythe			
		Hoddesden			
		Holbeach			
		Holmfirth £8880		3 10 0	
		Holyhead			
		Holywell (see British Provincial)			
		Honiton			
		Horncastle			
10		Houghton-le-Sprg.	10 0 0	8 0 0	
		Horsham			
		Howden			
		Hull, Sculcoats (see British Provin.)			
		Hull, £11,712. 10s.		5 0 0	
		Hunmanby			
210	10	Hungerford	10 0 0	5 0 0	10 0 0
		Huddersfield			
520	5	High Wycombe	5 0 0	6 0 0	5 0 0
		Ilminster			
		Ilford			
		Ilfracombe			
		Ironbridge			
1400	10	*Ipswich*	10 0 0	8 0 0	15 0 0
1400	10	,, new shares	7 10 0	8 0 0	
800	25	*Isle of Thanet* (Ramsgate&Mar.)	20 0 0	5 0 0	20 to 21
		Kendal £9100		8 15 0	
		Kenilworth			
		Keswick			
100	25	Kettering	25 0 0	5 0 0	25 0 0
		Kiddermins. £10000		5 0 0	
		King's Langley			
		Kington, Hereford			
		Kirkby Lonsdale			
		Kirkham, Lanc.			
		Knutsford			
		Lancaster			
		Llanelly £3000		5 0 0	
		Llandovery			
		Leamington Priors £22,500		6 0 0	
		Leatherhead			
		Ledbury			
		Leeds Old Comp. old stk., £60,300		10 0 0	
		new ,, £23,775		6 0 0	
		Leeds New £60,000		10 0 0	
		Leek			
		Leicester ... £36,230		7 0 0	
		Leigh			
125	20	Leighton Buzzard	20 0	5 0 0	
		Leominster			
		Leyburn, Yorksh.			
		Liskeard			
330	25	Lewes	25 0 0	5 0 0	23 0 0
		Lincoln £8000		10 0 0	
		Leyland, Lancash.			
		Littlehampton			
250	20	Lichfield	20 0 0	10 0 0	30 0 0
		Liverpool United	100 0 0	9 0 0	186 to 188
		,, ¼ sh.	25 0 0	9 0 0	46½ to 47
		Langport			
		London Comps.—			
5000	40	*British*	18 0 0	1 18 10	
		,, debentures £46,300		4 0 0	
5000	20	,, Provincial— (Holywell, Hull, Norwich, Potteries, Trowbridge)	20 0 0	7 0 0	17 to 19
	20	,, Prov., new	10 0 0	7 0 0	7 to 9
	25	*Commercial*	25 0 0	6 0 0	25 to 26
	25	,, new shares	15 0 0	6 0 0	part old is
	25	,, ,,	2 10 0	6 0 0	part old is
12,000	50	*Chartered*	50 0 0	6 0 0	44 to 45
6000	50	,, new shares	10 0 0	6 0 0	8 to 9
2000	150	*City of London*	150 0 0	4 0 0	120 to 125
4000	50	*Equitable*	50 0 0	2 10 0	26 to 27
		,, debentures £46,000			
10,000	20	European— (Amiens, Boulogne, Caen, Havre, Nantes, and Rouen)	20 0 0	5 0 0	10 to 12
2000	20	,, do. new	7 0 0	5 0 0	5 to 7

Number of Shares issued.	Amount per Shar	Name of Company.	Amount paid up per Share	Dividend per Cent. per Ann.	Price.
	£		£ s. d	£ s. d	£ s. d
15,000	10	*Gt.Cntl.Consumers*	10 0 0	5 0 0	10 to 12
8000	50	*Impl.Continental*—(Amsterdam, Aix-la-Chapelle Antwerp, Berlin, Bordeaux, Brussels, Cologne, Frankft., Ghent, Haarlem Hanover, Lille, Marseilles, Rotterdam, Toulouse, Vienna)	42 0 0	5 19 0	41 to 43
7000	50	„ new shares	41 0 0	9 15 0	60 to 65
	50	„ third issue	43 10 0	8 16 0	55 to 60
10,000	50	*Imperial*	50 0 0	6 0 0	68 to 70
3000	50	„ new shares	40 0 0	6 0 0	55 to 57
		„ debentures £50,500			
4000	40	*Independent*	40 0 0	6 0 0	46 to 47
3000	50	*London*	50 0 0		5 to 7
6000	25	„ preference	10 0 0	6 0 0	10 0 0
3000	50	„ 2nd do.	50 0 0		15 to 18
9000	50	*Phœnix*	49 0 0	4 10 0	27 to 28
1000	100	*Ratcliff*	90 0 0	5 0 0	60 to 65
4000	25	*South Metrop.*	25 0 0	6 0 0	22 to 23
		Surrey Consumers'			
9000	50	United General—(Cork, Dublin, Limerick)	50 0 0	2 0 0	16 to 17
12,500	20	Western	19 0 0		7 0 0
		Lostwithiel			
		Loughborough			
240	25	*Louth*	25 0 0	6 0 0	26 10 0
		Lowestoft (see Bec.			
611	5	Ludlow Union	5 0 0	6 0 0	5 0 0
		Luton			
		Lutterworth			
		Lyme Regis			
		Lymington			
		Malmesbury			
		Macclesfield 32,000		3 15 0	
		Maidenhead			
300	50	*Maidstone*	50 0 0	10 0 0	90 0 0
		Maldon			
		Marlborough			
		Malton (New)			
		Malvern			
		Manningtree			
		Mansfield £5000		10 0 0	
		March			
		Margate (see I. of T.			
		Market Deeping			
		Market Drayton			
132	25	Market Harboro'	25 0 0	6 0 0	30 0 0
		Market Raisin			
		Market Weighton			
		Marlow			
370	10	Maryport	10 0 0	6 0 0	12 0 0
		Melksham			
		Melton Mowbray			
		Merthyr Tydvil			
		Mere			
		Middleton £9039		5 0 0	
		Midsummer Norton			
		Middlesboro'			
		Mildenhall			
		Mitcham			
		Mold			
700	10	Monmouth	10 0 0	5 0 0	
		Monk Wearmouth			
		Moreton in Marsh			
		Morley			
		Mottram			
		Nantwich			
		Neath			
		Needham Market			
		Newark £5000		10 0 0	
250	20	Newbury	20 0 0	5 0 0	20 0 0
13,000	5	Newcastle & Gateshead Union	5 0 0	8 0 0	8 0 0
		Newcastle-under-Lyne £6200		4 0 0	
600	5	Newmarket	5 0 0	6 0 0	5 0 0
		Newnham, Glost.			
		Newent			
		New Mills £2115		8 0 0	
		Newport, M. £11720		4 0 0	
320	50	*Newport, Isle of W.*	38 0 0		19 to 20
		Newport Pagnell			
		Newport, Salop			
		Newton Abbot			
		Newton, Lanc.			
		Northallerton			
		North Walsham			
542	20	*Northampton*	18 0 0	10 0 0	27 0 0
		Northfleet			
		Northwich			
		Norwich (see British Pro. £40,000		7 0 0	
900	50	*Nottingham*	50 0 0	10 0 0	
900	50	New shares		10 0 0	
		Nuneaton			
		Oakham			
		Oakhampton			
200	10	Odiham, Hants	10 0 0	3 10 0	10 0 0
		Oldham			
		Olney			
		Ongar			
		Ormskirk			
		Otley, Yorkshire			
		Oundle			
150	120	*Oxford*	120	8 0 0	260
		Ocer Darwen £8000		5 0 0	
		Padstow			
		Pately Bridge, Yrk.			
250	20	Penrith	15 0 0	6 10 0	21 0 0
		Penryn			
		Penzance			
200	10	Petworth	10 0 0	8 0 0	12 0 0
		Petersfield			
		Pickering			
300	10	*Plymouth*	10 0 0	6 0 0	11 0 0
		Pocklington			
		Pontefract			
		Pontypridd			
400	10	Poole	10 0 0	5 0 0	10 0 0
		Port Madoc			
600	50	*Portsea Island*	53 0 0	5 0 0	45 to 47
400	10	Prescott	9 0 0	4 13 4	7 0 0
		Preston £52,500		10 0 0	
		Pwllhelli			
		Pudsey £12,000		5 0 0	
		Radcliff and Pilkington £9000		4 12 10	
		Ramsay, I. of Man			
		Ramsgate (see Isle of Thanet)			
		Ravenglass			
1000	10	*Reading*	10 0 0	3 0 0	7 0 0
500	20	*Reading Union*	20 0 0	6 0 0	17 0 0
		Redditch			
		Redruth			
		Reigate			
		Retford (East)			
		Rhyl			
		Richmond (Surrey)			
		Ripon			
		Rochester and Chatham £20,000		6 0 0	
		Rochford			
		Rockingham			
		Romford			
		Ross			
215	25	*Rotherham*	25 0 0	6 0 0	40 10 0
		Royston			
		Ruabon			
		Rugby			
		Rugeley			
		Runcorn £11,000		7 10 0	
		Ruthin			
500	10	Ryde	10 0 0	6 0 0	12 0 0
		Rye			
		Romsey			
		Saddleworth			
225	20	Saffron Walden	20 0 0	3 15 0	19 0 0
		St. Austel			
		St. Asaph			
		St. Colomb			
		St. Helen's £7500		7 10 0	
		St. Helier's (Jersey)			
		St. Ives, Hunting.			
		St. Ives, Cornwall			
250	10	St. Neot's	10 0 0	8 0 0	12 0 0
		St. Peter's Port, (Guernsey)			
320	25	Salisbury	25 0 0	6 0 0	28 to 30
		Sandbach			
140	10	Saxmundham	10 0 0	5 0 0	10 0 0
		Scarborough			
		Seaham Harbour			
		Sedburgh			
		Selby			
		Settle			
290	10	Sevenoaks	10 0 0	5 0 0	10 0 0
		Shaftesbury			
5400	25	*Sheffield United*	24 0 0	8 6 8	35 0 0
		Shelton, Potteries (see Brit Prov.)			
		Shepton Mallet			
		Sherborne			
2914	5	Shields Tynemth.	5 0 0	3 0 0	5 0 0
		Shields (South)			
		Shiffnal, Salop			
1000	5	*Shipley*	5 0 0	6 0 0	5 12 6
		Shipston-on-Stour			
		Shoreham			
		Shrewsbury £10,000		7 0 0	
400	10	Skipton	10 0 0	4 0 0	11 0 0
		Sleaford			
250	10	Slough	10 0 0		
		Snaith			
		Soham			
		Southwold			
		South Molton			
1000	50	*Southampton*	32 0 0	5 0 0	
		Sowerby, Yorksh.			
		Stretford			
		Stokesly			
		Stafford £10,000		5 0 0	
		Staines and Egham			
		Staley Bdg. £15,000		10 0 0	
		Stamford £11,250		3 0 0	
		Stockton-on-Tees £7980		9 5 0	
840	9½	Stockton, New	9 10 0	9 0 0	8 0 0
960	10	Stoke-upon-Trent	10 0 0	5 10 0	10 0 0
500	10	„ new shares	4 0 0	5 10 0	10 0 0
		Stone, Stafford			
		Stones Stratford			
		Stourbridge			
		Stowmarket			
150	20	Stratford-on-Avon	20 0 0	7 10 0	30 0 0
		Stroud			
169	10	Swaffham	10 0 0	5 0 0	5 10 0
		Swansea £9000			
		Sudbury			
		Sunderland, old			
6400	5	*Sunderland*, new	5 0 0		
		Sutton			
		Swindon			
		Sydenham			
2800	5	*Taunton*	5 0 0	None	2 10 0
		Tadcaster			
		Tamworth			
		Tavistock			
		Teignmouth			
		Tenbury			
		Tenby			
		Tenterden £2000		2 10 0	
		Tetbury, Gloster			
		Tewkesbury			
		Thame			
		Thetford			
		Thirsk			
		Thornbury			
		Thorne			
		Tiverton			
670	5	Todmorden	3 0 6		
		Torquay			
		Torrington, Devon			
		Totnes			
		Totnes and Bridgetown Consumers			
4000	5	Tottenham	3 10 0	6 0 0	3 0 0
		Towcester			
200	10	Tring	10 0 0	5 0 0	10 0 0
		Trowbridge (see British Provin.)			
75	50	Truro	50 0 0	2 0 0	
		Tunbridge			
		Tunbridge Wells			
		Ulverston			
		Uppingham			
910	5	Upton-on-Severn	5 0 0	5 0 0	5 0 0
		Usk, Monmouth			
		Uttoxeter			
		Uxbridge			
1000	25	*Wakefield*, old capl	25 0 0	6 0 0	25 0 0
1600	5	„ new „	5 0 0	6 0 0	5 0 0
300	10	Wallingford	10 0 0	5 0 0	8 0 0
		Wandsworth			
		Wantage			
		Warrington £23304		10 0 0	
100	10	Wareham	10 0 0	3 10 0	8 0 0
120	25	Warminster	25 0 0	5 0 0	27 0 0
		Warth			
		Warwick £15,000		6 0 0	
		Watford			
		Welchpool, Mntgy.			
		Wellingborough			
		Wellington, Salop			
		Wellington, Smrst.			
		Wells, Smrst. £5000		7 10 0	
		Westbury			
		Weston-sup.-Mare			
2000	5	West Ham	5 0 0	6 0 0	5 0 0
		Whitby			
		Whitehaven			
		Whitstable			
		Whittlesea			
		Wigan £10,160		10 0 0	
		Willenhall			
		Winchelsea			
		Winslow			
240	10	Wimborne Minster	10 0 0		
		Wincanton			
360	50	Winchester	50 0 0	6 0 0	
900	12½	Windsor	12 10 0	10 0 0	23 0 0
		Witham			
		Witney			
4448	10	*Wolverhampton*	10 0 0	7 0 0	15 0 0
		Woburn			
219	10	Wokingham	10 0 0		10 0 0
		Woodbridge			
		Wooler			
		Wotton-un.-Edge			
		Worcester £29,000		8 0 0	
		Workington			
		Worksop and Radford			
		Wirksworth			
		Worthing			
		Wrexham			
		Woolwich			
		Woolwich Consms.			
		Woolwich (North)			
		Wymondham			
		Yarm			
795	20	Yarmouth	20 0 0		15½ to 16½
		Yeadon, near Leeds			
		Yeovil			
		York Untd. £55,000		7 0 0	
		SCOTLAND.			
	5	Aberdeen	3 0 0		3 16 6
		Airdrie			
		Alloa			
		Annan			
		Anstruther			
		Ardrossan			
550	20	Arbroath	20 0 0	7 10 0	27 10 0
		Auchterarder			
750	2	Auchtermuchty	2 0 0	6 0 0	2 10 0
		Ayr, old			
		Ditto, new			
		Banff			
		Barrhead			
		Bathgate			
		Beith			
		Bervie			
		Biggar			
		Blairgowrie			
400	6	Borrowstowness	6 0 0	5 0 0	8 0 0
		Brechin			
		Bridge of Allan			
	2	Broughty Ferry	2 0 0	5 0 0	2 0 0
		Burntisland			
		Callen			
		Campbelton			
		Clackmannan			
		Coatbridge			
		Coldstream			
		Collinsburgh			
		Crieff			
		Crail, Fife			
		Cumbernauld			
		Cumnock			
600	5	Cupar Angus	5 0 0	6 0 0	5 10 0
250	10	Cupar Fife	10 0 0	7 10 0	14 0 0
		Dalkeith			
		Dingwall			
		Dornoch			
		Douglas			
		Dumbarton			
400	20	Dumfries	14 0 0	5 0 0	20 0 0
		Dunbar			
		Dunblane			
	23½	*Dundee*, old £29,687	23 15 0	8 8 0	30 10 0

Number of Shares issued.	Amount per Share £	Name of Company.	Amount paid up per Share £ s. d	Dividend per Cent. per Ann. £ s. d	Price. £ s. d
	5	*Dundee*, nw £33,851	5 0 0	2 10 0	4 0 0
860	10	Dunfermline	10 0 0	6 0 0	12 12 0
		Dunkeld			
		Dunse			
		Dysart			
6000	25	*Edinburgh Gas Co.*	25 0 0	10 0 0	52 10 0
	25	„ *and Leith Co.* £98,640	18 0 0	7 10 0	27 13 6
		Elie			
		Elgin			
		Falkirk, old			
		„ new			
		Falkland			
		Ferry Port on Craig			
		Fochabers			
		Forfar			
		Fort William			
		Fraserburgh			
		Galashiels			
		Garlieston			
		Gatehouse n. Fleet			
		Girvan			
	25	*Glasgow* £122,500	25 0 0	10 0 0	50 0 0
15000	10	*Glasgow City and Suburban*	9 0 0	7 15 0	15 12 0
		Grangemouth			
		Grahamston			
		Haddington			
		Hamilton £7500		8 0 0	
		Hawick			
		Helensburgh			
		Huntly			
		Inverary			
400	1	Inverkeithing	1 0 0	5 0 0	1 0 0
1200	10	*Inverness Gas and Water*	10 0 0	5 10 0	15 0 0
2400	5	„ new shares	1 5 0	5 10 0	2 5 0
		Irvine			
		Jedburgh			
		Johnstone, near Paisley			
		Keith			
		Kelso			
		Kilmarnock			
		Kincardine			
		Kinghorn			
		Kingskittle, Fife			
		Kinross			
		Kirkaldy			
320	5	Kirkcudbright	5 0 0	5 0 0	5 0 0
1000	3	Kirkintulloch, near Glasgow	3 0 0	5 0 0	3 0 0
227	5	Kirkwall	5 0 0	5 0 0	4 10 0
518	5	Kirriemuir	5 0 0	6 0 0	
		Lanark			
		Largo, near Leven			
		Largs			
		Lasswade, n. Edin.			
		Lauder			
		Leith			
		Leslie, Fife			
		Lesmahago			
		Leven			
		Linlithgow			
		Linton, n. Nobleh.			
		Lochee, n. Dundee			
		Lochgilphead			
		Lochwinnock, near Paisley			
1200	1	Markinch	1 0 0	7 10 0	1 5 0
		Mauchline			
		Maxwell-town, n. Dumfries			
		Maybole, Ayrshire			
		Maryhill, near Glasgow			
		Melrose			
718	2	Mid & East Calder	2 0 0		2 0 0
192	5	Moffat	5 0 0		
	13½	Montrose	13 10 0	7 11 1	
		Musselburgh			
		Nairn			
		Neilston, n. Glasg.			
		Newmills, near Kilmarnock			
		Newburgh, Fife			
		Newton-on-Ayr			
		Newton Stewart			
		North Berwick, n. Haddington			
		North Queensferry			
		Oban			
		Peebles			
800	25	Perth	25 0 0	4 16 0	22 10 0
	5	„ new	5 0 0		1 17 6
		Peterhead			
		Pittenweem			
		Pollokshaws, near Glasgow			
		Port Glasgow			
		Portobello, n. Edin.			
		Prestonpans			
		Rutherglen, near Glasgow			
		Renfrew, n. Paisley			
		Saltcoats			
		Sanquhar			
		Selkirk			
		South Queensferry			
		St. Andrew's			
		Stewarton			
		Stirling			
		Stoneheavn			
		Stonhouse, Lanrks.			
		Stornoway			
		Stranraer			
		Strathaven, near Hamilton			
		Thurso			
		Tillicoultry, n. Alloa			
800	1	Tranent	1 0 0		1 0 0
		Troon			
		Wick			
		Wigton			
		Wemyss	4 10 0		
		IRELAND.			
300	10	Armagh	10 0 0	8 0	14 10 0
		Ballinasloe			
700	50	*Belfast*	50 0 0		
		Ballymena			
		Ballymoncy			
		Carrickfergus			
		Carlow, new			
		Cork (see Un. Gen.)			
1300	5	Clonmel Consumrs	5 0 0	5 0 0	5 0 0
		Drogheda			
19,000	10	*Dublin Consumers*	5 0 0	7 0 0	6 0 0
		Dublin Hibernian (see United Gen.)			
160	25	Dundalk	25 0 0		22 0 0
		Dungannon			
1000	5	*Downpatrick*	5 0 0		
		Enniskillen			
		Galway			
400	10	Kilkenny	10 0 0	8 0 0	11 5 0
		Larne			
		Limerick (see U.G.)			
1725	5	Limerick Consum.	5 0 0	5 0 0	5 0 0
600	15	Londonderry	15 0 0	6 13 4	21 10 0
500	7	Lisburn	7 0 0	6 5 0	7 0 0
520	10	Lurgan	6 0 0	6 0 0	6 0 0
		Mallow			
		Monaghan			
		Nenagh			
418	5	Newtownards	5 0 0	4 0 0	5 0 0
		New Ross			
		Newry			
		Omagh			
125	20	Portadown	20 0 0	6 0 0	20 0 0
600	10	Sligo	10 0 0		
		Tipperary			
		Tralee			
		Waterford			
		Wexford			

The Gas Works in the undermentioned towns belong to private individuals:—

Abergavenny.	Ely.	Hertford.	Morpeth.	Sheerness.	Ware. (2 works)
Bridgenorth.	Farsley.	Holt.	Oswestry.	Sidmouth.	Wem.
Carlow, old.	Gainsborough.	Huntingdon.	Peterborough.	Sittingbourne.	Weymouth.
Carnarvon.	Goole.	Hyde (Cheshire)	Pontypool.	Spalding.	Whitchurch (Salop).
Deal.	Harleston.	Kingston-on-Thames.	St. Alban's.	Waltham Abbey.	Wisbeach.
Diss.	Hatfield.	Lynn.	Sandwich.		

The Gas Works belong to the Corporations, or to Commissioners acting under special acts of Parliament, in the following towns:—

Carlisle.	Keighly.	Milton (Kent).	Rothesay.	Southport (Lanc.)	Walsall.
Cashel.	Knaresborough.	Paisley.	Richmond (Yorkshire).	Stockport	Wells (Norfolk).
Coleraine.	Lytham (Lanc.)	Rochdale.	Salford.	Strabane.	Youghall.
Greenock.	Manchester.				

Price Current.

The following List of Prices is corrected by an eminent wholesale house in each trade up to the latest period:—

CASTINGS, per Ton.

Average Weight of Cast Iron Pipes, per Yard.

1½ in.	2 in.	2½ in.	3 in.	4 in.	5 in.	6 in.	7 in.	8 in.	9 in.	10 in.	12 in.
16	21	28	33	51	70	89	107	126	149	177	208 lbs.

Retail Prices are 5 to 10 per cent. higher.	London. £ s. d	Glasgow £ s. d	Newcastle. £ s. d	Wales. £ s. d	Yorksh., Derbysh. and Staffrdsh £ s. d
Pig Iron, No. 1	3 7 6	2 10 0	3 0 0	3 15 0	3 10 0
1½ and 2 inches Socket Pipes	6 0 0	5 0 0	5 10 0	5 15 0	5 15 0
2½ and 3 do. do.	5 17 6	4 17 6	5 7 6	5 12 6	5 12 6
4 and 5 do. do.	5 15 0	4 15 0	5 5 0	5 10 0	5 10 0
6 inches and upwards do.	5 12 6	4 15 0	5 2 6	5 7 6	5 7 6
Extra for bends, branches, and connection	2 0 0	2 0 0	2 0 0	2 0 0	2 0 0
Retorts, 1st fusion	5 5 0	..	..	4 17 6	5 0 0
Do. 2nd fusion	5 15 0	4 10 0	4 17 6	5 5 0	5 5 0
Tank Plates, ⅜ thick and above	5 10 0	4 17 6	5 0 0	5 7 6	5 17 6
Do. less than ⅜	5 15 0	5 0 0	5 0 0	..	5 10 0
Plain Castings ex. models	5 15 0	5 0 0	5 0 0	5 10 0	5 10 0

COALS.

NEWCASTLE. Unscreened.	s.	d.	
Burnhope	5	3	per ton.
Ravensworth Pelaw, Dean's Primrose, Pelton	5	9	„
Brancepeth, Medomsley, Pelaw	6	3	„
Eighton Moor, Felling Main, New Pelton, Peareth, South Pelaw, Waldridge, Washington Hutton, South Peareth	6	6	„
Ramsay's Cannel	12	0	„
Cowen's Cannel	12	0	„

DERBYSHIRE. Unscreened.	s.	d.	
Clay Cross, Deep Main, and New Birchwood	6	6	per ton.

SCOTCH CANNEL.			
Boghead	23	0	„
Kirkness best	23	0	„
Capeldrae, first quality	20	0	„
Ditto, second quality	10	0	„
Lothian	18	0	„
Lesmahago at Glasgow	16	6	„
Ditto at Leith	18	0	„
Arniston	16	0	„
Wemyss	15	0	„
Donibristle	10	6	„
Bridgeness, Kinneil	11	0	„
Lochgelly, Lumphinan	9	6	„

FIRE GOODS.

Best Bricks, 50s. per 1000, at Newcastle.
Do. Clay, 12s. per ton do.

LEAD.

Soft pig, £18. 10s. per ton.

WROUGHT IRON TUBING, subject to 40 per cent. Discount.

	2 inches. s. d.	1½ inch. s. d.	1¼ inch. s. d.	1 inch. s. d.	¾ inch. s. d.	½ inch. s. d.
Patent welded tubes, from 2 to 12 feet, per foot	1 8	1 0	0 10	0 7	0 5	0 4½
Ditto „ 6 in. to 18 in., each	3 0	2 0	1 9	1 3	1 0	0 9
Connecting pieces, or long screws	3 6	2 3	2 0	1 6	1 2	0 11
Bends, springs, and elbows, wrought iron	3 9	2 3	1 9	1 0	0 10	0 8
Tees, wrought or cast	4 0	2 6	2 0	1 6	1 1	0 10
Crosses, wrought or cast	4 6	3 0	2 6	2 0	1 6	1 2
Iron cocks	17 6	9 6	7 6	4 6	3 3	2 6
Ditto, with brass plug	28 0	16 0	13 0	7 0	5 6	4 6
Diminishing sockets, caps, plugs, and nipples	1 3	0 9	0 8	0 6	0 5	0 4
Plain sockets	1 0	0 8	0 7	0 5	0 4	0 3
Flanches	1 9	1 6	1 3	1 0	0 9	
Syphons, 2 quart	15 0	14 0	13 6	13 0	12 0	
Ditto 1 quart	11 6	10 6	10 3	10 0	9 6	

FREIGHTS, per Ton.

Coastwise—Newcastle.	s.	d.		s.	d.
Chatham & Roches.	6	6	Weymouth	8	0
Cork	8	3	Yarmouth	5	0
Dover	7	0	*Foreign.*		
Dublin	8	3	Amsterdam	9	3
Exeter Quay	8	6	Boulogne	7	3
Folkestone	7	0	Barcelona	15	0
Hastings	7	6	Bordeaux	9	6
Ipswich	6	3	Calais	7	3
Jersey	8	3	Dieppe	8	0
London	6	6	Hamburg	9	0
Lowestoft	4	6	Havre	8	9
Lynn	6	0	Lisbon	10	0
Margate	7	6	Rotterdam	8	3
Portsmouth	7	6	Rouen	11	0
Plymouth	7	3	St. Petersburgh	11	6
Southampton	7	3	Stettin	8	0
			Trieste and Venice	18	3